

MIND ·

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

I.—IDEALISM AND EPISTEMOLOGY.

By Professor JONES.

It can scarcely be maintained that the prevailing characteristic of recent English speculation is its "Cheap and Easy Monism". The 'Hegelians' and 'Neo-Hegelians' who are always referred to as deepest in this error (though they are not identified by their critics) are less in evidence than the Lotzians and Neo-Lotzians. And these latter are anything rather than Monists. Monism, if we may judge by them, is giving way to more or less thinly disguised Dualisms, or even Pluralisms; and philosophy is putting on motley. The tendency of 'the young bloods,' if I may quote the phrase of a young philosopher, is critical rather than constructive. They evolve no systems. They suggest that system-making is not consistent with sobriety of thought, and they confine themselves to analysis, the exposition of difficulties and polemic. They will admit, I do not doubt, that "the desire to comprehend the Universe as a revelation of a single principle is the genuine impulse of philosophy". But, so far as I can see, they do not give way to any such impulse. The speculative duty of the day seems to them to be that of dividing Philosophy into special departments. Besides Psychology, which is manifestly a special science, there are other disciplines different from each other but falling within Philosophy. Before we can attempt to construct a Metaphysic there are

"manifestly preliminary" problems to be solved. We must *first* have Psychology to deal with the inside of the individual's consciousness; then Epistemology to deal with the relation of the inside and the outside; then Ontology to deal with the nature of what is both inside and outside; and, I presume, Logic to deal with the processes of that 'hypothetical' existence, 'thought in general'. There may, indeed, be some way of bringing these departments of philosophy together, either under one of their own number, or under some fifth. But, as yet, that way has not been revealed to us. For the time being it has seemed sufficient to the new school of critics to expose the difficulties and errors which have sprung from the confusion of the categories and problems of these different and distinct disciplines by the 'Hegelians' and 'Neo-Hegelians'.

Now this critical endeavour is capable of being very useful labour, although a mere *distinguo* solves no problem. And the most faithful adherent of Idealism may well admit that no philosophic system stands in greater need of articulation. He would also fain believe that no system would gain so much by that process. A fresh application of its main principles to new data would not only enrich and substantiate but also modify them, and lead the way to a more complete and true view of the world. But criticism, if it is to claim the attention of philosophers, must itself be philosophical, that is, it must itself derive its impulse and guidance from some intelligible single principle. The difficulties urged against a philosophy should have some higher source than the commonplace empiricism of ordinary consciousness. The duty to criticise must be based on a right to criticise, and that right can only be derived from some consecutive and ultimately constructive theory of existence. I do not wish to imply that ordinary experience and the ruling convictions of unsophisticated mankind have no claim upon the philosopher's adherence; nor even to deny that philosophy may find its whole task in the systematic reconstruction of ordinary experience. But it is one thing to pay regard to the facts of such experience, and quite another thing to regard its own theories of these facts as the touchstone of philosophic truth. Philosophy is bracing itself to its most difficult and most productive task in attempting the former; it is denying its own right to exist in adopting the latter. Why should it toil if there lies ready to hand the cheapest and easiest of all methods, namely, that of simply accepting and re-wording the unconscious theories of traditional opinion?

Now, so long as the critics of Idealism produce no evidence that their criticism is itself construction disguised, they are liable to the charge of this lower appeal to 'common-sense'. Their recoil against Monism may seem to be a recoil against philosophical method; and, in the words of a recent writer, "their sympathy with the German reaction" may appear merely to "restore the rule of traditions which we are just beginning to lay aside". No doubt they cut themselves free from such uncritical traditions by claiming to rest their polemic on the basis of the Idealism which they examine. They profess an Ontology that is all-comprehensive. They will even admit, *at times*, as Lotze does, that the Supreme Subject, which used to be called the Absolute, is "the only reality". But their Ontology is, so far, a name and nothing more; and their supreme "Subject" is only an Honorary President who hypothetically acquiesces in the activities of his subordinate 'manifestations'. In virtue of that office the Subject holds things together somehow or other, and even unites thought and being. Professor Seth assures us that "the chasm" (*i.e.*, between thought and reality) "is not an absolute one, otherwise knowledge would be for ever impossible". And, in my opinion, this is self-evident. But in the previous sentence he tells us that "Ontologically, or as a matter of existence, they remain distinct—the one here and the other there—and nothing avails to bridge the chasm". And these two consecutive sentences, if we are not to forget one in reading the other, leave the relation between knowledge and reality in a very obscure state. The relation exists, but it is not ontological. Knowledge, we are told, is entirely within the subjective consciousness, while reality is not within it; and yet the former is connected with the latter, though it is not connected really but ideally,—or, shall we say, *unreally*? I think it fair to urge that the unity of knowledge and reality, which prevents "the chasm which nothing can avail to bridge from being 'absolute,'" needs further explanation. But no explanation is given. Attention is concentrated on the opposing terms. We are presented with a series of exclusive alternatives. Feeling is set over against knowledge, simple apprehension against reasoning, the 'given' against our thought, perception against conception, particulars against the universal, the subjective against the 'trans-subjective,' the ego against its experience, consciousness against its phenomena. Idealism, which has sought to bring these differences together as manifestations of a single principle, is regarded as having merely obscured their distinctions. Its obedience to the 'genuine impulse'

of philosophy seems to its critics to have issued only in a theory of the 'altogetherness of everything'. Now, I willingly admit that to obliterate differences is not to explain them. But to insist on differences to the exclusion of their unity is equally futile. And it is obvious that no criticism of idealism can be effective or just if it does not seize upon its 'single principle,' its colligating hypothesis, and show either that that principle is altogether untrue, or that its application to particulars is inadequate. But the critics attempt neither of these tasks. The idealistic Ontology which they profess is quite otiose. They dwell on the various aspects of the opposition of knowledge and reality as if, after the manner of the sceptics, they would fain make it absolute. They save themselves from the sceptical position by occasional hints at a 'faith' which is to do service when reason fails, or at a feeling which is to give evidence of matters of which we cannot be conscious. And in all these respects they seem to me to occupy the attitude of ordinary consciousness, except that critically they are better equipped. In other words, they are more fully conscious of the different aspects of experience which philosophy has to reconcile, if it has any task or function at all, but they make no attempt to effect that reconciliation; they put forward the problem of philosophy in the place of its solution; they criticise Idealism from a dualistic point of view.

It is in this dualistic spirit that they explain Kant, under whose broad ægis every writer on modern philosophy seeks refuge. For they certainly have gone 'back to Kant,' and, I believe, much further, even to Dr. Thomas Reid. They are proceeding to give us 'the authentic Kantian philosophy'; for who cannot find his own creed in Kant? And that 'authentic' or expurgated Kantian philosophy is, as they believe, a philosophy from which the 'many idealisms' could not have sprung except by the confusion of obviously different things, namely, knowledge and things known. Kant, it seems, held that knowledge was all inside, that all our perceptions are subjective phenomena and nothing more; and in this respect occupied 'practically the same ground as Berkeley'. He differed from Berkeley mainly in that he did more justice to the *a priori* elements in our purely subjective perceptions, and held consistently to things-in-themselves. This means, if I rightly understand, that Kant opposed ideas and things after the manner of Locke.

The hints given to us of the positive theory which lies behind this criticism of Idealism and this reconstruction of Kant point to the same dualism. That theory is to be a com-

bination of Epistemological Realism with Ontological Idealism. It shall show (1) that knowledge is not the reality known; (2) that knowledge is nevertheless *of* reality; (3) that the universe is "essentially related to intelligence" and not "a brute fact existing outside the divine life and its intelligent ends". I am not aware that any idealist would be prepared to dispute any one of these conclusions. No 'Hegelian,' 'Neo-Hegelian,' or 'Neo-Kantian' would hold that his ideas are the things which they represent. No one, except an absolute Sceptic, would deny that knowledge is '*of*' reality, though every philosopher would like to explain that '*of*'. And we are now, thanks mainly to Kant, all convinced that reality is "essentially related to intelligence"; though some of us would like to understand that intelligence and that reality in such a way as to make their relation intelligible. If it is sufficient to occupy these positions one after the other, or combine them externally into an Epistemologico-realistico-ontologico Idealism, then we may all assume, equally with our critics, that proud title.

But philosophy can not be satisfied with 'the cheap and easy method' of solving difficulties by a *distinguo*. It seeks a principle of unity in the differences; and that principle is scarcely brought to the surface by a theory which combines the dogmatism of Reid with the ontology of Hegel; for this seems to be the plain English of Epistemologico-realistico-ontologico Idealism. Dualism, which is philosophic failure, is too thinly disguised by this mixture of such heterogeneous elements as the absolute philosophy and unsophisticated popular opinion. And those who advance it, if they are not, as Mr. Bosanquet says, "fatally deficient in philosophic thoroughness," will be obliged to abandon either the one or the other of these elements. Nor is it difficult to see which element they will have to abandon. They are really objecting to the theory of Hegel from the point of view of Reid. Their Hegelian or idealistic Ontology is, as yet, not operative. Their active convictions are that man's knowledge is not the objects which it represents and that Hegelians say that it is; that books on philosophy, even if that philosophy be absolute, are not the Universe, and that Hegelians say that they are. The fundamental vice of the 'Hegelians' and 'Neo-Hegelians' is confusion. They have confused many things. They have mistaken a theory of knowledge for a theory of being, the facts of their own consciousness for the real things which they represent; they have identified their own ego with a logical category, and themselves with God. The claim of the critics to a hearing

rests on their efforts to disentangle these confusions and set the elements apart. But before attempting their tasks the critics may justly be required (1) to be quite sure that Idealists have confused these elements; (2) to bear in mind that the real task of philosophy begins only with the attempt to bring these elements together again as manifestations of a 'single principle'.

Now, I would be loath to assert that Idealists have at no time given colour to the charge that they have confused the distinction between knowledge and reality in one or other of its various aspects. But I would maintain, at the same time, that the Idealists have not identified their own ideas of things with the things which the ideas mean, or regarded the books of Hegel as the Universe. And I shall try to prove that to insist as *against* Idealism that knowledge is not that which is known springs from a fundamental misapprehension of the idealistic point of view.

I regard Idealism—to put the matter as plainly as I can—as a theory which represents the Universe as a thinking activity, an activity which reaches its highest form in this world in man. The critics accuse Idealists of saying that the Universe consists of *ideas* or thoughts, hanging together in a kind of system. Such a 'world of ideas' they, quite naturally, find to be very unreal, lacking all stability and substantiality—a mere cloudland. It is, they hold, only a subjective world, inside the 'consciousness' of individuals; and they would, therefore, attach it at both ends to realities—at one end, to individual thinkers who produce thoughts, and, at the other end, to 'trans-subjective' facts which the thoughts represent. They thus get three sciences, or three departments of philosophy, namely, Epistemology to deal with our thoughts 'of' reality, Psychology to deal with the thinkers, and Ontology to deal with the nature of things, including thinkers. In consistency with this view they accuse Hegel and his followers of 'swamping Epistemology in Metaphysics,' as well as of the opposite error of swamping Metaphysics in Logic. This means, I presume, that Hegelians succeed in both making the world of realities swallow the world of ideas, and the world of ideas swallow the world of realities—like the conjurer's two snakes, each of which disappeared inside the other. Or, to speak without the violent metaphors of 'swamping' and 'swallowing,' the opposition of thoughts and things has been obliterated by the Hegelians, old and new; and their critics are bent on holding the opposites apart, and on giving a theory of each of them and a theory of their relation. This, I believe, is the precise

point on which most of the critics of Idealism base their attack ; and on this rests their own constructive endeavour. In other words, they contend for the need and possibility of a science of the relation between ideas, 'the subjective states, which are plainly our data,' and 'trans-subjective realities,' or the things meant by these ideas.

Now any theory of the relation of these opposed terms implies that both of them exist. The critics thus rest their case on the existence of a world of ideas (or of as many worlds of ideas as there are individual thinkers), and on its difference from and relation to a single world of real objects. The Epistemology which is to clear the way for Metaphysics is to give a systematic account of the relation of these inner and outer worlds ; and the fundamental error of Hegelianism is that it has rushed straight on Metaphysics, without distinguishing the sphere of thoughts from the sphere of things, the categories of Epistemology from those of Metaphysics.

But 'Hegelians' are, in my opinion, exposed to a still more fundamental charge. They not only have no Epistemology, but they deny that such a science is possible. They do not recognise the existence of a sphere of ideas requiring to be related to a sphere of thoughts. And it is evident that before a science of the relation of two worlds, one subjective and the other objective, can be justly demanded from them, they must be convinced that both of these worlds exist. Idealism, as I should like to call the theory of Hegel and his followers, leaves room for Psychology, as it does for Botany or Physics or any other special science that deals, under its own appropriate hypothesis, with definite facts or special elements of the real world of objects. But its own proper task is throughout metaphysical ; it is to investigate the nature of a single real principle and to trace its activity both in outer facts and in thinking individuals. Of a 'world of ideas'—whether in individual thinkers, or hanging in mid-air, so to speak, between individual thinkers and the things they think about—it is obstinately ignorant. And, consequently, they do not oppose the world of ideas 'with its imperturbable repose and clearness,' as Lotze says, to the world of things with its innumerable activities. The opposition is to them meaningless. They cannot confuse therefore its terms, nor feel the need of an Epistemology to expound their relation.

The first task of the critics of Idealism is, therefore, to prove that a 'world of ideas' exists, either in thinkers or between them and the world they know. But of this I have seen no proof ; and I think that no proof is possible. So far as

my experience goes—and these critics of Idealism lay great store on the experience of any individual—ideas form no world, but each of them exists as long as it is being produced, and no longer. They are evanescent products of an intelligent activity which vanish when the process that brings them forth stops. It is not Idealism but Associationism that regards ideas as capable of hanging on to one another like a swarm of bees, or of arranging themselves in a system 'imperturbable in its repose'. And it is not Idealism but Associationism that can demand and seek to establish a science to relate these subjective systems of ideas to the outer world. One might expect that Mr. Bradley's criticism of this view had given it its final quietus, but a little experience of philosophers should cure the youthful error of being sanguine. May I repeat, then, that ideas seem to me to occur in sequence; that they follow one another, so far as they are distinct presentations, in a serial order; that not one of them persists in existence; that having once perished it is never revived; and that, for each and all of these reasons, a world of ideas 'imperturbable in its repose' is impossible?

This is a very simple matter, it seems to me, but the consequences of ignoring it are so numerous and important that I am tempted to dwell a little upon it. These consequences may be more fully realised if we consider a possible and even probable objection to our view. We speak of an inheritance of knowledge capable of being hoarded by one generation and handed down to its successors. And surely, it may be urged, there are systems of knowledge, symbolised in books and otherwise, which have a universal meaning and a permanent value for mankind. Such bodies of knowledge are to be confounded neither with the fleeting psychical presentations in the minds of their authors, nor with the realities which they represent. The ideas of Plato and Newton, in the sense of their psychological presentations, perished as they arose, one after the other. They were never in the minds of their authors, all at once. They are now all perished with their authors. Nevertheless, it seems little less than wilful perversity to deny that these men left behind them in their works systems of knowledge,—what are not inappropriately called 'worlds of ideas' as an inheritance for all thinkers. Is it not undeniable that of certain parts of the earth we obtain information only from books of Geography; that there are ideas in those books for all who can understand them; and that these ideas are neither the psychological presentations in the minds of the writers of those books nor

the actual parts of the earth? Ideas, then, it may be urged, perish as psychical events, but as having meaning they are capable of being permanent and of forming systems.

This distinction is also applicable to the ideas of an individual. We speak of the growth of a man's knowledge, a growth which implies both the accumulation and systematisation of his ideas. And, apparently, we can be as sure that this growth takes place as we can of any other fact of experience. Such knowledge can not be identified with the evanescent psychical events in his consciousness; for these latter are serial and fleeting, and can, therefore, be neither accumulated nor systematised. To confuse this distinction is to confuse an idea as a psychological datum, which is as subjective, incommunicable and transient as the pain of toothache is, with an idea as having objective, and therefore universal and permanent meaning.

Now, it may be urged, while it is evident that Epistemology as a science of subjective phenomena is impossible, Epistemology as a science which explains the objective reference or universal meaning of these ideas may be both possible and necessary. But it is in the latter sense *only* that the critics of Idealism regard Epistemology. Ideas as subjective phenomena are, in their view, to be dealt with by Psychology. They belong exclusively to the private history of the individual. But ideas as having objective reference, a meaning for all minds capable of apprehending them, form the subject-matter of Epistemology. The spheres of these sciences are quite distinct from each other and from that of Ontology. The scientific law, *e.g.*, that the attraction of bodies for one another varies inversely with the square of their distances, is as distinct from the psychological occurrence in the consciousness of its dead discoverer as it is from the actual attraction itself. And, in so far as this law is part of a connected whole of meaning which we call the Copernican System of Astronomy, the term 'world of knowledge' sufficiently describes an actual fact. In that case Epistemology has a distinct field of inquiry, and the 'Hegelians' and 'Neo-Hegelians' cannot, without detriment to clear thinking, 'swamp it' in Metaphysics.

Our Epistemological critics would, no doubt, put their objection more forcibly. I have done what I could, and I now proceed to examine it.

The distinction between ideas as mere occurrences in consciousness and ideas as having objective reference seems to me quite valid. Mr. Bradley has succeeded in putting this matter beyond reasonable dispute. The question that

remains is, does this distinction justify the view that there exists, besides subjects and objects, a world of knowledge awaiting explanation at the hands of a science which is neither Psychology nor Metaphysics, but is, apparently, subsequent to the former, and certainly preliminary to the latter? Does there exist such a third sphere, or does it not rather consist of hypostasised abstractions? There are evidently thinkers and objects thought about; are there other 'existential realities'—to use a phrase of our critics?

I do not think that there are. Ideas are not 'existential realities' in any sense, whether as psychological phenomena or as having objective reference. They are not divisible into two parts, one of which perishes, while the other has permanent existence. The objective reference is an essential characteristic of *every* idea as a phenomenon of consciousness and inseparable from it. The fact that we can and should distinguish these two *aspects* of ideas does not justify us in separating them, in making one fleeting and subjective and the other permanent and objective. Nor can we make ideas the subject of different sciences, except by a process of abstraction that becomes vicious if taken as ultimate. Prof. Seth tells us that "the psychologist deals with psychical events merely as such". "It is only for the psychologist that mental states are interesting on their own account, as subjective realities or facts. To every one else they are interesting only for what they *mean*, for the knowledge they give us of a world beyond themselves." . . . "We treat them consistently as significant, as ideas of something, as representative or symbolic of a world of facts. Now it is from this latter point of view that epistemology considers ideas." (*The Philosophical Review*, vol. i. pp. 131, 132.) But it seems to me that psychology cannot deal with ideas 'merely as psychical events'. Apart from their objective reference, which Prof. Seth hands over to Epistemology, the psychologist could not recognise them as ideas. If he could, every idea would be the same as every other; perceptions, imaginations, memories, concepts, reasonings, as mere psychical events would be indistinguishable. In omitting the objective reference the psychologist would be endeavouring to deal with form without content, and the whole task of his science would be to mark the time of psychical occurrences, none of them having any character. His Epistemology would "swamp" his Psychology. But, again, such an Epistemologist as Prof. Seth describes would be equally helpless. For it is evident that he could find no ideas having objective reference except those which are also phenomena

of the individual consciousness. Or does Prof. Seth know of a world of thoughts without a thinker? If not, then his Epistemologist must take account of the fact that the ideas whose reference he would expound are psychical phenomena and nothing more; though, if they are ideas, they are psychical phenomena which have and must have objective meaning. In this respect Psychology would justly 'swamp' his Epistemology.

What, then, is to be said of such systems of thought as the ideal theory of Plato, or the astronomical theory of Copernicus or Newton? Simply, I would answer, that as *knowledge* or *ideas* they are psychical experiences of individuals, fleeting and subjective; and as having permanent meaning for mankind they are not ideas nor knowledge, but objective facts consisting of symbols, and capable of being interpreted into knowledge, or ideas, by the activity of individual minds. In this last respect they fall entirely into the world of external objects, and they are permanent objects of knowledge for exactly the same reasons as works of art, or plants and planets, are permanent objects of knowledge. They are related to intelligence and await its interpretation in precisely the same way. They are natural objects in the outer world, presented to intelligence in the same way as all other objects which have meaning. They occupy no sphere by themselves. They do not constitute a 'world of ideas' from which we must in some inexplicable way escape in order to find realities corresponding to them. They do not, therefore, await interpretation at the hands of a special discipline called Epistemology, but are objective facts whose ultimate nature is to be explained by Ontology. In themselves they are not knowledge. When intelligence interprets them, not before and not after, they may in a sense be called systems of ideas. But so may plants and stars.

Of course these systems of knowledge as outwardly symbolised, which is the *only* way in which they can be regarded as 'existential realities,' form a special class of outer objects. In their case some form of matter—whether it be ink and paper as in books, or stones as in sculpture or architecture, or sounds and movements as in human speech—becomes informed with meaning which is foreign and accidental to it. The objective fact in these cases is a sign or symbol, that is, something whose essence is its meaning and whose *special* material form is more or less extraneous and contingent. But I do not think that this distinction is relevant here. Language, whether written or spoken, is not an outward fact of the same kind as the natural events

whose meaning it is used to convey. Still it *is* an outward fact, and it is ultimately to be explained in the same way as other outward facts. And it is only as outward objects, capable of being interpreted, that systems of knowledge have any permanence and can be inherited from one generation by another. By the help of language, a system of objective signs, we inherit them from our predecessors just as we inherit their works of art, public buildings, canals, and coal mines. What is handed down from age to age and accumulated is not knowledge but the *means* of knowledge; not ideas but objects which have meaning. That meaning must be elicited anew by every generation for itself. It is only when so elicited that there is knowledge, as we have consciousness of beauty when we appreciate a work of art, or a scientific law when we understand a physical fact or event.

It is equally manifest that there is no accumulation of knowledge in the individual. There are no ideas except those which occur serially. Each of these ideas is a transient psychical phenomenon which has more or less significance, according as it is a more or less complex unity of multiple elements. Being transient, ideas cannot be accumulated. All the objections urged by Mr. Bradley against the Associationists are valid against all ideas alike, whether particular (were their particular ideas) or universal. They perish with the process of knowing, and they can never be called into existence again. Of course that process may be repeated. The individual may go through similar intellectual activities over and over again with like results; but neither the activities nor their results are identically the same. They have no permanence. The permanent identity is on the one side the thinking subject, and on the other the objects thought of. The subject grows, but not his knowledge as such. Every intellectual act modifies *him*. Every process is organised into him in the form of developed faculty. But the thoughts themselves pass away, as other good or bad actions do. They are accumulated only in the same sense as a learner of the piano accumulates technical skill. Each thought vanishes like each movement of the fingers on the keys; but no thought vanishes before the result of the activity from which it sprung has been organised into the agent by the development of his powers. In a word, there exists no world of ideas any more than there exists a world of actions.

All this seems to me so plain and elementary that I press it at such length with some sense of shame. But, on the other hand, the metaphorical use of such phrases as 'world

of knowledge' exercises such a tyrannical power in philosophy that very important results would follow the clear consciousness that they are metaphors—that the 'world of ideas,' whether regarded as in 'imperturbable repose' with Lotze, or as 'wandering adjectives' with Mr. Bradley, is a more or less solidly hypostasised abstraction, and nothing more. If this phantom world were swept off the boards altogether we should no longer need Epistemology in the sense of a theory of the nature and validity of the objective reference of ideas. It would then be clearly seen that what remains to be explained is the activity of knowing, the intellectual processes performed by individuals in virtue of an ontological relation between them and objects in the outer world. The task of philosophy would be to investigate the nature of this ontological relation, or of the "single principle" which makes possible the intelligent processes in individuals. Logic would no longer seem to be an analysis of the relations of ideas to one another, but an exposition of intellectual processes. It would not be a theory of abstract conceptions, but an ontological inquiry, just as the physical sciences are. And if it should turn out in the last resource that every process is best explicable as a process of thinking, then Logic would itself be Ontology, or Metaphysics, as Hegel conceived it.

For this is what Hegel meant. To him the Universe was not a system of thoughts, but a thinking reality manifesting itself most fully in man. He has been regarded as setting in motion an 'unearthly ballet of bloodless categories,' and then to have confounded these categories, these thought-determinations, these abstract ideas, with realities. He is accused of inventing a logical chain of mere thoughts, analogous to 'Plato's system of general notions or ideas,' and then to have endowed these thoughts with a dynamic power. He is thus guilty as Plato was of a 'crude mythology,' of substantiating mere ghosts, of taking a *mauvais pas* from the world of mere thoughts to a world of real things. "The distinctive feature of the Platonic theory of Ideas," we are told by Professor Seth, reading Plato backwards, "in which it is a type of a whole family of systems, Hegel's among the rest, I take to be its endeavour to construct existence or life out of pure form or abstract thought. Plato's whole account of sensible things is to name the general idea of which they are particular examples; Hegel's whole account of Nature is that it is a reflexion or realisation of the abstract categories of Logic." As against this view Professor Seth insists that knowledge is not reality, that the notion of Being is not existence, that the form or self-consciousness is neither man

nor God, but an abstract thought. "Hegel," he says, "has taken the notion or conception of self-consciousness, and he conceives the whole process of existence as the evolution and ultimately the full realisation of this notion. But it is evident," he adds, "that if we start thus with an abstract conception our results will remain abstract throughout." *Most* evident, I quite agree. To evolve things out of ideas is a manifestly hopeless endeavour. Out of thoughts can come nothing but thoughts. This matter is so evident as not to need discussion, or proof, or iteration. If Hegel and his followers, old and new, have attempted this task they are convicted, in my opinion, of manifest absurdity. *Ex nihilo nihil fit*. From a world of ideas which has no existence, which is a mere manifestation of a subjective process of intelligence, nothing can be deduced. Abstractions cannot yield even abstractions.

The truth of the matter is, however, that the critics of Idealism have been reading into that system their own views. They believe in this world of ideas; they desire a science of it; they wish to relate it to a world of realities. For them the categories are general ideas connecting other ideas, universal thoughts like beams supporting an edifice of thoughts. For Hegelians and Neo-Hegelians there are no general ideas which do not perish in the making. There are no categories in this sense, no thoughts which bind other thoughts to one another. There is no world of knowledge in the heavens above, or on the earth beneath, or in the water under the earth. Their universe is mind, not thoughts. Their categories are laws of the operations of intelligence, not connecting ideas. Their problem is to understand reality, to discover the nature of the fundamental principle of which all existences are revelations, not to constitute a theory of a world of abstract notions. That fundamental reality they pronounce to be the universal intelligence, whose operation they would fain detect in all things. They are as frank in their ontological intentions, as little troubled with Epistemology and the sphere of ideas, as if they were Materialists. The laws of thought are not for them the laws of *thoughts*, but the law of things. They do not wish to know the nature of knowledge, except in the sense of the process of knowing. Their attitude towards thought is that of science towards natural processes. Their explanation of thinking is as ontological as the physicist's explanation of gravitation. If their explanation is more full and true it is to that degree more intimately related to reality. If, as they hold, all reality is ultimately explicable as Spirit,

or Intelligence, their Ontology *must* be a Logic, and the laws of things *must* be laws of thinking. And this is just what Hegel tried to prove in his Logic, in which he advances from being to thought. I am not concerned at present in defending this interpretation of the universe as a thinking activity. It may be quite as absurd to regard physical energy as intelligent action, as it is to regard the intelligent activity of man as the operation of mere physical force. To say, for instance, that gravitation is implicit, or obscure thinking, may be to speak nonsense, as it probably is for the Materialist to say that conscious action is nothing but the intricate movement of physical particles. It may be impossible either to level up or to level down, to regard Matter as Spirit or Spirit as Matter. In any case there is no doubt, in my opinion, that Idealism is committed to the view of the world as Spiritual, and that the interpretation of God, man and the world as *thoughts* is as foreign to it as their interpretation into rings of smoke.

If this is so then the arguments advanced by these epistemological critics against Idealism are simply beside the mark. If they are valid at all, which is very doubtful, they are valid against some fundamentally different system of philosophy. Indeed, the service of these critics to students of Hegel, in particular, is confined pretty much to the fact that they have unconsciously drawn attention to the point in which his theory differs essentially from previous systems. For I should say that the most significant advance made by Hegel consists, not so much in his reconciliation of knowledge and reality, as in his refusal to start—as previous philosophers did, and most of his critics still do—from their opposition. If we except Spinoza we may say that modern philosophy up to and including Kant has endeavoured to pass from the subject to the object, from thought to reality, or from reality to knowledge, from the object to the subject. Kant did more than any one else to show that the object implied the subject, and he pointed out also, though less clearly, that the subject implied the object. But subject and object, thought and reality, were never completely reconciled by him. The things-in-themselves became more and more shadowy in his hands, but they never disappeared; in other words, the fact that reality and thought are *essentially* related became ever more clear to him as he wrote, but this relation was not at any time so essential to him as to be *constitutive* of both the related terms. He always took his start from their opposition. He discovered again and again that each term had meaning *only* in re-

lation to its opposite. Sense was helpless without thought, thought without sense; conception without perception, perception without conception; the 'given' or the manifold, without reason and its categories; man and the world without God. But the great step which was implied in all this, but only *implied*, it was reserved for Hegel to take: the step, namely, of making the *opposition* of the terms subordinate and secondary to their unity, and of regarding them as elements of unity. Kant's task to the end was that of reconciling differences, that of Hegel was to differentiate a unity. Kant sought to bring thought and reality together, Hegel starts from the conception of a reality which is all-inclusive, manifesting itself both in the knowing subject and in the known object. Kant had demonstrated to him by his failure that to take either of the alternatives as a starting-point was to make the other inaccessible. Thought in Kant never quite got over to things, and things never revealed their inmost nature in thought, and, in consequence, an element of scepticism, euphemistically and sophistically called 'faith,' was the last outcome. Hegel, therefore, thought to take his stand *behind* these alternatives, on the reality, the All, which manifests itself in both of them. And his relation to this reality is as frank as that of the Materialist, who also has the significant philosophical merit of at once taking his stand on the unity of things. His task was to discover what conception of this single principle, or fundamental unity, which alone *is*, is adequate to the differences that it carries within it. '*Being*,' he found, leaves no room for differences; it is overpowered by them. Quantity, Quality, Measure—all forms of Essence; Substance, Cause, a cause which is also effect—all forms of external relation; even consciousness was inadequate. He found that the reality can exist only as Absolute Self-Consciousness, as a Spirit who is universal and who knows himself in all things. In all this he is dealing with Reality.

Starting with a conception of the Real, the All, which might satisfy a materialist, he moves on, ever dealing with that Reality, to the conclusion that it must be conceived as Spirit. To regard Hegel as dealing with thought-determinations, as generating abstract conceptions out of one another, as needing in the end to leap out of the sphere of mere thoughts into a sphere of reality, is to attribute to him that dualism by repudiating which *alone* he was able to gain his starting-point. Go where Hegel will, he cannot escape from the Reality. He finds it active in all thinking, in all being. No *idea* of the reality interposes between him and it. In

his ideas he detects the working of that reality. Apart from it he cannot even think falsely. His incomplete conceptions are as truly *its* manifestations, the results of *its* activity in him, as the growth of the grass, or the evolution of worlds, are its manifestations. He finds the Absolute, God, in the development of the thought of mankind, in the rise and fall of nations, in the establishment and overthrow of social institutions in the movements of history, just as truly as did the Hebrew prophets, or Carlyle. His task is to find God everywhere, to justify 'the faith'—if I may use this word of what was to him a rational necessity, and not a conviction unjustified by reason—that the Absolute Spirit lives and moves in all things.

This conception, no doubt, brings with it sufficient difficulties. It involves the Absolute in the fate of the finite, and raises in a new form fundamental questions that lie at the root of human life. It may be so conceived as to confuse the human and the divine, to blunt the edge of the opposition between right and wrong, and to make sin and goodness meaningless by undermining the freedom on which their possibility rests. But it is questionable whether any theory confronts these difficulties so fairly, or throws more light upon them. And in any case it is certain that to urge against Hegel or his followers that they are occupied in evolving abstract ideas from each other, that they have shut themselves up in a cloud-land of mere conceptions, and have committed the preposterous mistake of taking knowledge of reality for reality itself, their own passing ideas for things, and their systems and books for the Universe, is an accusation that comes home to roost. It is the critics of Idealism who find ideas interpose between them and reality, and who cannot escape from this shadow of themselves. They, and not the Hegelians or the Neo-Hegelians, find themselves shut up in a world of their own thoughts and are occupied in the hopeless puzzle of getting out of it. They want a theory of thoughts, of their validity and value, as if by thinking they could prove their validity; or as if the *theory* of thoughts were any nearer reality than the thoughts themselves. It is to me the supreme merit of Hegel that he has indicated a way of deliverance from this endless and hopeless puzzle of getting out of thoughts by means of thoughts. And he has done so by planting *himself* to begin with in the system of the real. Instead of regarding reality as circling round *his* ideas, as his critics do, he has brought about the Copernican change. His ideas are the working of reality in him; apart from that reality he is helpless, in so far as he is its

instrument, 'all things are his'. Consequently he has repudiated altogether 'the sphere of thoughts without a thinker,' swept away the world of ideas that divides the thinking intelligence from its objects, left man and the world, thinkers and 'things thought about' fairly confronting one another without any unsubstantial medium to separate them, and done his part to rid modern philosophy of the sickly element of subjectivity. He has, therefore, no Epistemology, and he needs none. His theory is a theory of the real, as Metaphysics was in the hands of Aristotle. In establishing that theory he deprived both thinkers and things of the false independence attributed to them by Individualism, but he did not reduce them into phantoms called thought-determinations, or abstract ideas, or logical categories, nor cut them loose from existence. They remain 'existential realities' for him, for they belong to the system of reality. And the system to which they belong, the Real which manifests *itself* in them is to him, as it was to Aristotle, Spiritual, an intelligence which knows itself in all things. To him there is no activity which, ultimately, is not the activity of Spirit. And, in consequence, the laws of its operations are laws of thinking—not the laws of thoughts. On this account his Metaphysics is also a Logic, a science, not of the connexions of ideas, but of the *operation of mind*. In a word, Hegel speaks of thinking, his critics speak of thoughts, converting his process of Reality into abstract and unreal general notions and his Ontology into an Epistemology.

How such a perversion of his meaning and of the meaning of his idealistic followers has come about, I shall try to show in another article.

II.—ARISTOTLE'S THEORY OF REASON.¹

By F. GRANGER.

ALEXANDER of Aphrodisias begins the long series of those who understand Aristotle in a sense decidedly theistic and supernatural. Reason, Aristotle has told us, is present in man as a faculty only.² The active operation of thought is determined by the development of this faculty. But Alexander, interpreting such statements, affirms that it is not any part of our own souls which completes this development; we must look to the divine reason which operates upon the human, and indeed is, through this very influence, an object of thought for the human reason.³ Theological considerations seem to have biassed Alexander's estimate of Aristotle, as indeed they biassed the neo-Platonist commentators who followed him. And if such was the case with these late Greek thinkers, much more was it the case with the great Catholic Aristotelians—Albert and Thomas. When we reach the more recent students of Aristotle, we begin to breathe in a clime more purely metaphysical. And yet in the expositions of the most clear-eyed students of the Stagirite, we often catch, by a certain inevitable necessity, reflected lights foreign enough to that Greek world of the fourth century before Christ. But if we regard Aristotle's theory through any medium other than that of his own age, or in any light but that which is cast upon it by the speculations of his forerunners and masters, we run a great risk of overlooking its unique and distinctive splendour. So true is the instinct which has driven sixty generations of students to busy themselves upon this theory of reason. We have in it a treatment, positive in the main, of a subject which presents many temptations to speculative partisanship—an exposition which *speaks of nothing more than what we are*, and therefore appeals to us with somewhat of the power of the plain truth, when we become weary of more highly coloured delineations of man's place in the world. This neutrality

¹ In the *Classical Review* of July last year I attempted to indicate some aspects of Aristotle's theory of reason, which do not harmonise with certain traditional interpretations; I shall here proceed to some speculative considerations which come in when a more strictly textual criticism has had its say.

² *De anima*, 429^a 22.

³ Zeller, iii. 1³ 796.

of Aristotle has witness borne to it in the many varied meanings which have been read into his work.

The feeling that Aristotle is obscured rather than elucidated by his numerous followers, has often found expression. As long ago as 1581 Patricius announced in his *Dissertationes Peripateticæ* that he was about to shake himself free from Alexander of Aphrodisias, Averroes and the other commentators, and that he would henceforth study the master himself. In the same temper Trendelenburg explains his aim to be that Aristotle should be understood from Aristotle.¹ This is admirable as far as it goes. We are thus disentangled at once from the brushwood and undergrowth that have sprung up around Aristotle's teaching.

But we are not yet satisfied. We want to get at its roots and to explore the soil in which it grew. In order the better to understand Aristotle's theory of reason we need to trace its relations to the theories of Parmenides and Anaxagoras, not to speak of Plato. Zeller would have laid us under even deeper obligations than he has done already, if he had devoted more space to the sources upon which Aristotle drew in this matter. As it is, we feel as we read his account, that the originality of Aristotle may be exaggerated, and that he could not have been so independent of his teachers and contemporaries as at first sight appears. This appearance is undoubtedly due to our scant acquaintance with early Greek philosophy, but even yet we can trace several of Aristotle's leading ideas about the reason to earlier sources.

For example, Parmenides asserts the identity of thought with its object in terms which are repeated by the later philosopher; and even his materialism, his subordination of the mental fact to its physical condition, is not wholly unrepresented in Aristotle, who describes the objects of our apprehension as taking precedence of the perceptive activity.² In other words, Aristotle is more inclined to explain the soul through the world than the world through the soul. Like Parmenides for whom the actual world 'that which is' was the proper object of speculation—and this no faint logical shadow but concrete nature—so Aristotle declares with all possible impressiveness that it is the business of the highest speculation to investigate 'being'.³ And if in the course of the investigation it turns out that the very fibre of reality is eternal, immovable and independent of sensible limitations, we must still bear in mind the 'positive' starting-point,

¹ *De anima*, 2 103.

² *Cat.*, 7^b 37. *Meta.*, 1072^a 30.

³ *Meta.*, 1003^a 21.

the actual environment which is taking these more ideal shapes before our eyes. This however is just where many idealist interpreters of Aristotle fail to do him justice, the failure being twofold. In the first place we invert the Aristotelian procedure completely if we deduce reality *a priori* from the categories of consciousness: in the second place we perform an operation herein which is of less dignity and importance in Aristotle's eyes than the inductive method.

*Smooth the descent and easy is the way ;
But to return and view the cheerful skies,
In this the task and mighty labour lies.
To few great Jupiter imparts this grace,
And those of shining worth and heavenly race :—*

as if a certain loftiness of spirit were implied in the effort to ascend from the particular to the universal, Aristotle never ceasing to dwell upon the majesty which lurks in that mental process by which the universal, the fundamental, is grasped amid the particular and negligible. 'This,' he says, 'would seem to be a special form of soul, an everlasting element which is raised above the transitory and perishable.'¹ And so although he would start with Parmenides from 'that which is' and never lose sight of the limits which hem in the mind's course, his goal—this ultimate stage of thought—is worthy enough. Even on those ethical considerations to which certain schools of idealists appeal when they are about to beg the question, it must be reckoned a more admirable thing bravely to set out from the actual immediate fact and make the best of it, than to assume the inadequacy of our intellectual equipment and so find excuse for slumberous indolence. There are plenty to say: 'The way is long and weary, and many impassable obstacles lie between us and yon distant desired horizon. Let us stay here and make believe that we are there.' In some such terms as these is presented on all sides the temptation to that besetting sin of the intellect, the ignoble idleness which masquerades as peace of mind. Surely this is not an unfair caricature of some systems which set out to deduce reality from an *a priori* principle. 'Perhaps such methods are easy'—so Theophrastus remarks in his *Metaphysics*—'but they neither make for clearness nor produce conviction.' At any rate they are far removed from the method of Aristotle.

Let us approach Aristotle, in another way, and this time from the standpoint of certain contemporary critics. The history of early Greek philosophy has been well compared to

¹ *De anima*, 413^b 25.

a conversation; as if each statement were either an answer to some question, or else a contradiction of something previously said. And this applies to Aristotle. One point on which he lays much stress in his discussion of the reason is better understood if we take account of his critics of the Megarean school. He seems to have been specially distasteful to them for some reason or other: the head of their college quarrelled with him and spread all manner of scandal about him, and this precedent was followed by later men of the same way of thinking.¹ Aristotle refers in the *Metaphysics*² to a favourite tenet of theirs at which he aimed his distinction between the potential and the actual. 'There are some who say with the Megareans that a given potency is present only when it is active, and that when it is not active it does not exist. For example, the builder has not the power of building except during the moments when he is at work. And so on in other cases.' If we imagine the Megareans to apply their argument to the reason, they might say: 'There is no faculty of reason in man except at the moments in which he is actually thinking'. The fortunate preservation of a fragment of Theophrastus' commentary *De anima*³ shows that this view was indeed put forth by the Megareans in regard to reason. We thus come to see why Aristotle devoted so much attention to this aspect of the matter. 'The reason,' he says, 'exists actually only at the moments when it is operative.' So far he agrees with the Megareans. But he proceeds⁴ in the spirit which led Lotze to distinguish different grades of validity: 'Those who say that the soul is the sphere or home of forms are right if their statement is limited to the highest or rational stage of the soul's development: and if we understand the reason to be *potentially* identical with the forms and not *actually* so'. And he further develops this distinction by marking the successive heights of the mental ascent. The cultured reason, like the uncultured, has but a potential existence except at its seasons of activity. But how different the lurking possibilities! On the one hand, the mere promise of a future life of intellect: on the other, a ripe faculty ready to burst at once into the noblest processes of mind!

But if we understand Aristotle's theory of reason better when we trace his relations to Parmenides and the Megareans, we are likely to receive more striking illustrations still when we betake ourselves to the teachers whom he avows, Anaxagoras and Plato. 'If the reason is to think all things

¹ *Dio. Laert.*, ii. 109.

² 1046^b 29.

³ Themistius (Spengel), i. 198.

⁴ *De anima*, iii. c. 4.

it must be free from admixture of foreign elements.' Here is a thought of Anaxagoras. 'For that which is foreign blocks out and eclipses the objects of our mental vision.' Hence the constitution of the reason must lie in its pure potentiality, in its being capable of taking upon itself, of being realised in, every intellectual form. Or to use Hegel's suggestive figure: 'Every man is a whole world of conceptions which lie buried in the night of the Ego'.

We now come to Aristotle's immediate predecessor and master, with whose followers he classed himself even in his latest writings. In the *Metaphysics* he can still say, when referring to Plato's distinctive teaching: 'As we hold' or 'believe,' and the like; apparently adhering still to the tenets of the Academy. And so we shall be more nearly right if we dwell upon what he retained of his early studies than upon what he cast off. Just as the Platonic system starts from the Idea and finds in the reason the faculty in which the Idea is echoed or reflected, so Aristotle assumes the objects of the intellect *τὰ νοητά*, and from them explains the faculty which apprehends them *ὁ νοῦς*. The alterations which Aristotle's theory of Universals involved in his theory of the reason are not so fundamental as to disguise its close relation to the Platonic theory. The supremacy which was assigned there to the Idea of the Good, now passes to the purely intellectual objects. But on Aristotle's theory we need not recall them from any pre-natal life; we find them to hand in the concrete objects of present experience. 'In material things,' Aristotle declares, 'each intelligible is potentially present.'¹ And this dependence of the human reason upon outward conditions is used by him to account for the intermissions of its activity. In Aristotle's view, then, the activity of reason depends upon complex conditions: it is the joint product of a potency within and a potency without; reason waiting for its objects, intelligible objects waiting for a reason to think them—the *discerning intellect of man* waiting to be wedded to this goodly universe. Herein, Aristotle would seem to say, is the crown and consummation of that long process of striving which finds its realisation in man at his best. This is that eternal activity of reason which is the noblest of all activities—eternal because it is an integral factor in the world—an activity unaffected, unblurred, by the infinite diversity of its objects.

Some who would enrol Aristotle as a partisan in modern

¹ *De anima*, 430^a 6.

theological controversies pass over this 'positive' aspect of his teaching, his resolute self-limitation to actual human experience, and attempt to extract various mystical senses from his theory of the active reason. Yet in the *Ethics* and the *Psychology* alike, he declines to go beyond problematic statements when he speaks of the life after death.¹ He glosses over his personal convictions only that he may not wound the feelings of his less philosophic contemporaries.² Thus he bounds his ideal state by the limits of this present life. In Mr. Stewart's words, 'εὐδαιμονία is the form and organisation of man's powers and opportunities'. . . . 'νοῦς in man, like φύσις in nature, recognises and imposes definite limits'.³ The same profound insight, which as it gazed upon the particular fact was rewarded by the beatific vision of the intelligible, also found in human life at its highest, an existence than which, amid its interruptions, the divine life was better merely for its unbrokenness. And so as Aristotle moves amid the phases of this human life he is impressed by its majesty—a feeling voiced in his use of the word *τίμιος* here and there.⁴

We have thus traced some of the influences which have determined Aristotle's view of reason. Let us now attempt to draw from his works a more rounded outline of his theory. In the *Psychology* he treats reason as a faculty which is organically related to other faculties; in the *Posterior Analytics* as the organ of knowledge; in the *Ethics* as occupied with matters of practice; in the *Metaphysics* as attaching to the noblest existences and therefore to God.

Aristotle, like Plato, disentangles the thread of conscious life into two main strands, sense and thought, and these again he sunders into their component fibres. Laying sensation on one side, let us see what he finds in *νόησις* the activity of reason. He detects here two main elements, *φαντασία* the power of representation, *ὑπόληψις* the power of conceiving something as true—*sumere aliquid pro vero*—in Bonitz's words. The latter power is further sub-divided⁵ into *φρόνησις*, the worldly wisdom, prudence or tact that comes of experience; *δόξα* the unscientific judgment in which the experienced but undisciplined mind finds expression, and lastly *ἐπιστήμη*, which knows things through their causes. *Ἐπιστήμη* may present itself under three aspects: *ἐπαγωγή* the assembling of particulars in the act of induc-

¹ *Nicom. Ethics*, 1101^a 23. ² *Ibid.* ³ *Notes, Nicom. Ethics*, vol. i. 95.

⁴ *De anima*, 402^a 1, 414^b 19, &c. ⁵ *Ibid.*, 427^b 25.

tion; *νοῦς* the intuitive faculty by which the detached attributes are cemented together into the indissoluble unity of the true concept, and lastly the process of discursive reasoning *συλλογισμός*. We may notice in passing the ambiguity which attaches to Aristotle's use of the term *νοῦς*; now he extends its meaning over the mental field, until it embraces all the processes just enumerated, even as far as imagination; now he understands the term in its more special and deeper sense, as the faculty of inward intuition. This ambiguity was pounced upon by Simplicius¹ and Priscianus Lydus.² And it must be borne in mind as we move amid the intricate mazes of Aristotle's system.

Over against this imposing array of functions, Aristotle ranges a scale of the objects upon which they are exercised. Let us first single out and put on one side the objects of sense-perception. Sensible objects *τὰ αἰσθητά* fall into *ἴδια* those which are proper to each sense, such as light and colour to vision, sound to the ear; *κοινά* the common sensibles, those which are apprehended by several senses equally, such as motion, number, shape; *τὰ κατὰ συμβεβηκός*, the objects disclosed incidentally in the act of sense-perception, such as that yonder whitish-grey object is a sheep or an eagle.³

The objects of experience being either sensible or intelligible, every object falling outside this list must be included under the objects of reason. What are these? No violence is threatened to Aristotle's meaning if we turn for an explanation to the passage in which he distinguishes the several classes of thinkers, beginning with those whose operations are nearest in kind to the primal sensible experience: the physicists. Next after them come the mathematicians, and lastly the philosophers *par excellence*. The physicists, he says, are occupied with the objects contained or embodied in matter *τὰ ἐνυλὰ*: the mathematicians, with objects embodied in matter, but separable by a logical abstraction *τὰ ἐξ ἀφαιρέσεως*: the first philosopher, with the immaterial essences which stand in no necessary implication or connexion with matter *τὰ ἀνυλὰ*.⁴ Here then we have a triple division of intellectual objects, and three corresponding manifestations of the intellectual faculty.

It may not be out of place here to dwell for a moment upon Aristotle's view of induction. It differs in some important particulars from that current conception of the

¹ *De anima* (Hayduck), 220, 38.

² (Bywater) 29, 5.

³ *De anima* 418^a 7.

⁴ *I De anima*, 403^b 11.

process which represents it as mediate, as accumulating its material before beginning to operate upon it. Mill, for example, declares¹ that 'the first step of inductive inquiry is a mental analysis of complex phenomena into their elements, the next is an actual separation of those elements'. This is unexceptionable if we understand the statement to refer to an ideal or standard method such as indeed logic is properly occupied with. But it fails to represent the process by which the mind actually forms complex inductions. For the mental analysis of which Mill speaks must be undertaken from a standpoint which already is more or less defined. The mind must already have some clue before it begins the process of analysis, if it is not to lose itself amid the infinitely numerous conditions which attend each phenomenon. Mill himself is careful to point out in the sequel how indispensable the hypotheses are which shall serve as clues. But these hypotheses are not external to the inductive process proper, they are in truth inductions in their nascent stages. They are the inklings, more or less apt, of the laws under which are combined the particular experiences of which the hypotheses are the psychical summaries: a hypothesis being an intuition more or less imperfect of the facts which will be more perfectly formulated later. Thus induction, at its best, really consists of a series of intuitions each clearer than the last, each portraying a phase of the truth, unsatisfactory in itself but blending and melting into a newer and clearer phase.

Perhaps the distinction between the two points of view may be emphasised thus: Before analysis of a mental state is possible it must have attained a considerable degree of clearness and distinctness. Hence the mere assumption that we can proceed to 'mental analysis of complex phenomena into their elements' implies a long preparatory stage in which our first ideas—vague and confused—have passed into concepts, clear and distinct. The logician proceeds on the assumption that all his subjects and predicates are completely determinate, moving in a sphere as little realised in positive experience as the purely geometrical world described by Euclid. Just as the progress of mechanical nicety—say in the preparation of specula for telescopes—consists in an asymptotic approach to a geometrical accuracy, so the inductive process in a scientific experience consists in a series of attempts to represent the truth, an aim never completely realised, though with marvellously near approaches to the desired goal.² In some such terms as these may we para-

¹ *Logic*, bk. iii., cf. pp. 1, 2.

² Jevons, *Principles of Science*, chap. xxi.

phrase and develop the famous passage at the close of the *Posterior Analytics*, a passage repeated with but few alterations in the beginning of the *Metaphysics*. 'A memory of the same circumstance becomes an experience when oft repeated. For memories, numerically many, enter into a single experience. And the principles of science take their rise in experience, in the universal which persists in the soul.' And in the closing lines of the book he defines *νοῦς* or reason to be the faculty engaged in this process. We are now perhaps in a position to understand what Aristotle means when he speaks of the science which directs its intuitions upon Being. In the spirit of the method just outlined he proceeds in the *Metaphysics* and elsewhere by a series of approximations, essaying every approach to his subject, now starting one suggestion, now another, in that fashion which is at first so bewildering to the student of Aristotle.¹ Yet his inconclusive procedure is well adapted to the ends he designed. To involve the inquiring mind in perplexity, to baffle it with repeated questions, has at least one good effect. It impresses it with the complexity of the problems which are set before it, and ensures in some degree that 'the universal which persists in the soul,' the intuition in which amid changing memories the true experience is apprehended, shall have penetrated beneath the surface of the immediate fact.

But this very reason, which has such an intuitive apprehension of eternal truths, can also be directed upon those elements of experience which are changing and evanescent. The speculative reason is not fundamentally other than the practical or deliberative reason; its manifestations alone are different.² Disciplined and developed by its quest after the arcana of knowledge, it returns with increased power to those problems of the particular and contingent which it passed on its way.

Such then is reason according to Aristotle, in its development, its operations and its ultimate form. Two questions have often suggested themselves to students of this theory, which we may now attempt to answer for ourselves. In the first place what does Aristotle mean when he says that reason is identical with the object of reason? Undoubtedly he must have taken account of Parmenides' statement to the same effect. It is worth while to dwell for a moment on the explanation with which the Eleate follows it up:—³

To think is one with that of which the thought is,
For you shall not find thought without being.

¹ *Cat.*, 8^b 22. ² *Nic. Ethics*, 1139^a 21. ³ Ritter and Preller, 97.

In a paraphrase this might run : All operations of thought are identical with their objects. But you may not convert the proposition *simpliciter*. You may not say: All objects of thought are identical with operations of thought, for it may happen at some moment that a given potential object of thought is not entering into any intellectual experience. Not to speak of other cases, the mental life of the individual suffers interruption in sleep. Doubtless such an interpretation as this misrepresents to some extent the cruder vein of Parmenides, who seems to have regarded thoughts as materially identical with their actual objects.¹ It squares, however, with Aristotle's treatment of the subject, and his theory of formal identity. As for Parmenides, so for Aristotle, the presence of an object is a necessary condition of thought. 'Reason,' he says, 'stands in a receptive relation to its object.'² But Aristotle marks off his standpoint from that of Parmenides by limiting this identity of thought with its object to immaterial things. The identity is one of form not of matter.

Yet in thus limiting the statement of Parmenides, Aristotle would not regard himself as having weakened it in any essential point. After all the true reality of each element in the universe consists in its active manifestation or function ; and this the Aristotelians expressly identified with the logical essence.³ Hence when reason is declared to be receptive of the essence, it is declared to enter into, and to find itself identical with, the functions and offices of which reality is constituted. Thus in reflecting upon the intelligible processes of nature, reason becomes one with its fundamental elements.

Further, the reason which is thus in possession of the essences of objects thereby also contains their cause. It is not indeed their efficient cause—it is not the creator of the world in which it finds itself. (For that matter there is no room for the idea of creation in a system like Aristotle's which represents heaven and earth as eternal.) Yet in containing the formal causes of things the reason lies very near to the heart of the world. Reason is a cause not as making the world what it is, but as entering into it as an indispensable factor. And since it thus stands in the highest rank of the cosmic hierarchy, intelligent life is necessarily eternal ; a presumption strengthened if we should see reason to believe, as the Aristotelians did, that the organ of reason, the human species, was eternal.

¹ *Theophr. de sensu*, c. 1. ² *Meta.*, 1072^b 22. ³ *Theophr.* (Wimmer), Fr. 24.

Aristotle's favourite distinction between potency and realisation would suggest to us that he regarded the individual as a focus at which various potencies converge, the realisation of each essence implying the meeting together of certain potencies. Thus the individual human soul offers a *rendezvous* at which the potential objects of reason which are present in this material world may meet with that faculty which is potentially identical with them, and may blend with it into a single process. And in this sense the reason may be said to become its objects.¹ For the forms or universals on which reason engages itself are also the successive phases of the life in which it manifests itself. The act of thought by which a universal is conceived is also a revelation of the thinking faculty. The objects of reason are moments in the life of reason.

The other point which suggests itself for elucidation is this: 'What is the occasional cause which sets reason to work? The famous fifth chapter of the third book *De anima* does indeed seem to imply at first sight the dependence of the human reason on a universal reason. But such an interpretation is discordant with the rest of Aristotle's system, and is not required, or indeed, I venture to say, admitted by the text.² The reason is a psychical faculty and is only found where there is a psychical life; in man or in higher beings, that is to say, in God.³ To postulate a universal reason beyond these individual beings is to introduce the Platonic ideal theory into the peripatetic citadel. There is a universal reason, Aristotle might be supposed to say, in the same sense that there is a universal humanity. But this reason is found in individuals alone. Yet something more must be understood here than a bare nominalism. In the case of immaterial objects the notion is identical with, and in, each particular instance. The notion of soul is identical with the soul.⁴ Hence it is one reason that operates in you and in me, and—so Aristotle declares—in God!⁵ But there is no relation of dependence between reason in man and reason in God. They exist side by side in the sum of being.

A fragmentary statement of Theophrastus might also seem to support the view contested here. In a somewhat striking passage⁶ he speaks of the development of reason as necessarily either from within or else under the influence of

¹ Prisc., *Metaphr.*, 29, 18.

² See my article, *Class. Rev.*, vi. 298 ff.

³ *De anima*, 414^b 19. *Meta.*, 1072^b 29.

⁴ *Meta.*, 1043^b 1.

⁵ *Meta.*, 1027^b 25.

⁶ Prisc., *op. cit.*, 29, 15.

some other reason. There might seem at first sight some ground here also for interpreting this other reason as a world-reason filtering in upon our souls from beyond. But there is a more obvious interpretation lying close to hand. Let us leave these *watch-towers in the skies* for the firm earth of historical fact, and cast one glance upon Aristotle's intellectual career. In his student days, and still more in his years of teaching, he must often have seen how mental discipline at the hands of his seniors can transform the uncouth lad into a subtle thinker, how *lofty thought lifts a young spirit from its mortal lair*; the process being most impressive when lofty thought walks the earth in the garb of a great teacher, the austere homespun of Socrates or the fastidious attire of Plato. An explicit reference of Aristotle¹ leads us to connect his theory of reason with the processes of education. He is considering the different senses in which we can ascribe intellectual endowment to human beings, and points out that the latter phases of their development transcend the earlier ones through 'learning and discovering': instruction and the discursive activity of which the reason thereby becomes capable thus being the main factors in the change. The clash of spirit with spirit in the dialectical exercises of the Academy and Lyceum would furnish examples of this striking enough. Aristotle thus carries us back to one of his favourite maxims: that education demands natural endowment and instruction and practice; his emphasis of 'discovering' being directed against the notion that teaching alone was adequate. For the rest his reference to learning carries us back to the Socratic tenet that all knowledge and capacity lie dormant at first, and require the stimulus of wisely directed questioning in order to manifest themselves. Here surely we have that influence of an external mind which in Theophrastus' view may supplement the development of the reason from within. It may appear somewhat of an anticlimax to pass from anything so magnificent as a Theory of Creative Reason to Aristotle's experience as a practical teacher. But the fault is in our perception, not in the subject. Now-a-days we are wearied by platitudes concerning education, and our edge being dulled, we can no longer penetrate the exquisite issues that after all are at stake. Hence it is somewhat hard for us to picture the glowing enthusiasm with which perceptive minds watched the great experiment in its first beginnings at Athens; the systematic attempt of society to further the mental development of its individual components.

¹ *De anima*, 429^b 6 ff.

III.—METHODS OF INDUCTIVE INQUIRY.

By HENRY LAURIE.

MILL's System of Logic still holds its own in our Universities, and is likely to be retained as a text-book for a considerable time to come. No one is supposed to have made an adequate study of the Logic of Induction who does not know his Mill. We can no longer say, with Lewes, that "to the vast body of cultivated Englishmen his Logic has sufficed for all their instruction in Philosophy"; but the belief is apt to linger that it contains all that is needed for instruction in Inductive Logic. And later works on the subject by English writers, friendly or hostile, lead us back to Mill by repetition or criticism of his teaching.

The conviction, however, is gaining ground that Mill's Canons of Proof, which have been committed to memory and poured forth on reams of examination paper by successive generations of students, are not to be received with that entire faith which they have been wont to inspire. If this impression be correct, it is not enough that their faults should be pointed out; it is important also that better rules should be devised to take their place. It is my purpose, in this paper, to suggest amended Canons, which will be found to differ very considerably from those of Mill. Starting from his treatment, and having no desire to deviate from it save where emendations are imperatively required, a brief review of his Canons will lead most naturally to the amendments which I propose.

First, then, of the

METHOD OF AGREEMENT.

Mill's Canon runs thus:—

"If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree is the cause (or effect) of the given phenomenon".

This is illustrated by the formula:—

ABC
abc

ADE
ade

These cases agree in the presence of A and *a*. If we have ABC with the effect *abc*, and ADE with the effect *ade*, then, it is argued, *a* must be the effect of A. Antecedents other than the constant A are set aside as unconcerned with the

production of *a*, since *a* has occurred without them; and consequents other than *a* are dismissed as unconnected with *A*, since *A* has appeared without ensuring their presence.

But how have we secured that point of departure which the argument requires? In our application of the Method we are asked to *begin* with complex generalisations; but how have these been attained, and to what test have they been subjected? The universe, in the impressive phrase of Mill, presents itself at first as a chaos followed by another chaos; and after mental analysis it still exhibits a vast multiplicity of antecedents and consequents. It is very far from accommodating us at once with limited sets of phenomena answering to our alphabetical illustration. Our problem, indeed, is to formulate tests by which generalisations may be tried; we wish to know on what conditions we are justified in proceeding from the observation of particular facts to universal laws; and we are moving in a circle if we begin with complex generalisations as already established. As Mr. Bradley has shown, Mill begins with prepared material. We are presented at the outset with complex antecedents and consequents, said to be causally connected; and the only task which remains is to draw from these carefully prepared data, by the elimination of some of the factors, the expression of a simpler uniformity. Even were *this* successfully accomplished, it would not give us what we want; for the complex generalisations themselves require justification. As Whewell put it, we are not "to take for granted the very thing which is most difficult to discern".

From other points of view, Mill himself has shown us that his Canon is too strongly stated, and that his symbols are inapplicable. It is required by the Canon that there shall be only one antecedent common to our instances. But Mill tells us that it is impossible to assure ourselves of this. We may go further, and say that in every case we may easily assure ourselves to the contrary. For every event there are an indefinite number and variety of immediate antecedents, not one of which can, prior to investigation, be pronounced irrelevant to the result. There are permanent causes, which cannot be set aside *a priori*; there are facts which, though not permanent, are of frequent recurrence; and in addition to the antecedents we know, there are others of which we are ignorant, so that our *a* may be the result of conditions which we have not discerned. Thus the Canon is faulty in laying down a requirement which cannot be satisfied. Again, the plurality of causes is said to be the "characteristic imperfection" of the Method of Agreement, and though this plurality, like the "multiplication of effects," may dis-

appear before a searching analysis, there is a popular sense in which it must be admitted ; it is obviously true, for example, that equal quantities of heat, of light, of mechanical motion, may be produced by various agencies. The phenomenon *a*, as Mill remarks, may at one time be caused by *C*, at another by *E* ; and he might have added that, if a constant antecedent *A* contribute to the result at all, it may do so in conjunction with other factors. To escape from the difficulty of plurality of causes, we are recommended to multiply and vary our instances indefinitely, so that here again the Canon, with its limited requirement of "two or more instances" in proof of causation, calls for emendation. And after having been sent as far afield as possible in the search for instances, we are told broadly that by the Method of Agreement alone "we never can arrive at causes" ; we cannot gain even a derivative uniformity of causation, but at best an empirical law of sequence. Our instances still leave us in uncertainty whether or not they contain the vital points of agreement ; they may yield us only sequences which, though dependent on causation, are not themselves causal ; and so the Method is, by itself, powerless to link together the conditions and the conditioned. The Canon of Agreement is thus torn to pieces by the hands which constructed it.

In endeavouring to amend the Canon, I propose to restrict it to the results of observation in the more limited sense of the word, excluding experiment. According to Mill, the Method of Agreement is "more especially the resource employed where experiment is impossible". But he applies it to cases in which experimental trial is an essential feature, and in his miscellaneous examples he extends it to the subsumption of laws, already supposed to be ascertained, under a higher law. Cases in which the test of experiment is employed fall within the Method of Difference and may be adequately dealt with there ; while the subsumption of laws is best treated, where Mill has placed it in a later chapter, under the general title of the Explanation of Laws of Nature. The problem being thus limited, I would suggest the following Canon :—

When within our experience a given antecedent has always been followed by a given consequent, or when phenomena have always been found accompanying each other, there is a probability that the given antecedent and consequent, or the concomitant phenomena, are connected by a law of causation ; and this probability increases with the number and variety of the instances.

This rule, it will be observed, does not profess to be a rigid Canon of *proof*; it contents itself with indicating a *probability* which may range from a very low to a very high degree. It embraces concomitant as well as sequent phenomena, and while in this respect it agrees with the method of simple enumeration, it differs from it in the stress which it lays on the variety as well as the number of instances. To enhance the probability, we must deliberately assemble, not only as many but as varied instances as possible. In including concomitant phenomena, I deviate from the intention of Mill, who is occupied in his Canons with phenomena of succession; but there is no reason why phenomena which occur simultaneously should not be investigated under this Method. In the course of an investigation it may be sometimes difficult to ascertain if two phenomena are exactly contemporaneous, or if one is prior to the other; and when this difficulty is overcome, observed coexistences, no less than sequences, may help us on our way. In the first place, the Method indicates the probability of empirical laws, or, in other words, of uniformities of sequence or coexistence which have obtained hitherto within our experience, and which may therefore be provisionally accepted. Further, it indicates that there is a reason for the sequence or coexistence in some causal uniformity connecting the phenomena in question. What this causal law may be is not yet known, and cannot be known by the Method of Agreement. The mere sequence of phenomena, even though it be uncontradicted within the range of our personal experience, or of testimony, does not prove the phenomena to be related as cause and effect; their succession may be due to the sequence of other conditions. And derivative laws of coexistence may be due to the presence of causes into each of which the same condition enters. All this must be the subject of inquiry lying beyond the scope of this particular Method. The Method points to the probability of some law of causation, which, if discovered, would explain more satisfactorily the facts disclosed to our observation. This probability is merely a stage in our progress, and we must not rest here if it be possible to go further. Agreement serves to stimulate hypothesis, and paves the way for other and more effective methods.

It may be added that the probability of causal connexion is not necessarily destroyed by a failure in the absolute uniformity of agreement. If, in many and varied instances, we have found A followed by a, and subsequently encounter an instance, or perhaps several instances, in which A makes its

appearance without a , we are not to conclude that the probability yielded by the more numerous positive instances is to be wholly set aside. We must bear in mind the possibility of counteracting conditions to which, in the exceptional cases, the absence of a may be due. The frequent concurrence of phenomena is enough to suggest the hypothesis of a causal relation, as against the less probable conjecture of a chance coincidence. The remark of Sir John Herschel that "counteracting or modifying causes may subsist unperceived, and annul the effects of the cause we seek, in instances which, but for their action, would have come into our class of favourable facts," may be appended as a useful caution to the statement of our Canons.

As an example of the application of the Method of Agreement, let me take the remarkable coincidence which has been found to obtain between the phenomena of sunspots and magnetic disturbances on the earth. On given dates, when sunspots were numerous, the disturbance on the sun's surface has been accompanied by magnetic storms in England and America. The concurrence of these phenomena on one, two, or three occasions might have been put down to mere coincidence; but frequent concurrence strongly suggests a causal connexion. The probability increases with the number of concurrences under circumstances otherwise varied. When it is found, on comparing years of great sunspot disturbance with years of great magnetic disturbance, that there is a remarkable agreement, and when further, on comparing a large number of individual instances, it is observed that the two sets of phenomena agree in the very day of their occurrence, the terrestrial phenomena being simultaneous with, or immediately sequent on, the observations of solar commotions, the probability of a causal connexion obviously increases with the number of such instances. But after all both sunspot and magnetic disturbances may be the index of some cause, as yet unknown, which gives rise to both phenomena. The Method of Agreement, while giving us a strong probability of causal connexion, is powerless to disclose what this connexion is.

METHOD OF DIFFERENCE.

As this is the great method of experiment, there can be no doubt of its importance and power. The only question is, how the Canon regulating its employment can be best expressed. Mill's statement is:—

"If an instance in which the phenomenon under investiga-

tion occurs, and an instance in which it does not occur, have every circumstance in common save one, that one occurring only in the former; the circumstance in which alone the two instances differ is the effect, or the cause, or an indispensable part of the cause, of the phenomenon”.

The formula by which he illustrates the Canon—

ABC	BC
<i>abc</i>	<i>bc</i>

—may be looked at from two points of view. We may know, to begin with, that given ABC, the effects *abc* will follow; and we may then be fortunate enough to succeed in making, or in finding, an instance of BC followed by *bc*. Or we may know that the effect of BC is *bc*; we may then add to our antecedents the new antecedent A, obtaining the augmented result *abc*. In the first case, eliminating A, we eliminate *a*; in the second, adding A, we obtain *a*; and thus, in either aspect of the Method, we are invited to accept the conclusion that *a* is the effect of A, or that A is the cause, or an indispensable part of the cause of *a*.

It is clear that Mill's Canon and formula presuppose the knowledge of a complex law of causation linking together definitely known antecedents and consequents. They assume that, before proceeding to apply the Method, we have dismissed from our consideration a vast number of circumstances “already known to be immaterial to the result,” and have surmounted any difficulty which might arise from the presence of unsuspected conditions. It is taken for granted that, in some way which is not explained, the infinite complexity of nature has been narrowed down, for our immediate purpose, into a limited group of antecedents and consequents with which alone we have to deal. The position from which we are thus invited to set out is very far from the beginning of experimental inquiry; the clear-cut instances supposed are possible only in an advanced stage of scientific research. In such circumstances the Method, as Mill has formulated it, may be applicable. When the experimenter has reached the happy assurance that all the relevant facts are within his grasp, he is certainly warranted in concluding that, in the particular experiment in which he is engaged, the exceptional antecedent has some share in the production of the exceptional result, and that, should the same conditions again occur, the same result must be realised. Even then, however, it does not follow that the Method is free from the imperfection of plurality of causes. It does not tell us that the result can be produced only in one way. Admitting a possible plurality of causes, we have no right to assert that

the A which contributes to an effect in a certain instance is always indispensable to its appearance. And Mill himself, though speaking of the Method of Difference as free from the characteristic imperfection of the Method of Agreement, immediately afterwards acknowledges that, while his formula may prove A to be the cause of *a* in a given instance, "the cause which produces it in other instances may be altogether different".

We see, then, the direction in which the Canon requires amendment. Our problem is to set forth the grounds on which we may legitimately pass through experiment to the inference of a universal law; and our solution is incomplete unless it covers the simpler and more elementary experiments of science and of daily life, as well as the most advanced examples of carefully prepared experiment. In every successful experiment there must, at least, be negative and positive instances corresponding to the two sides of Mill's formula. But it is not absolutely necessary that we should be already in possession of a definite uniformity of causation, or that we should have a thorough knowledge of all the antecedents which may possibly be relevant. Such knowledge is eminently desirable, but we must often be content with less, and at the beginning of an inquiry it is manifestly beyond our grasp. We have our negative instance whenever the circumstances are powerless, so far as our observation goes, to produce a certain effect. If then a new antecedent be introduced into these circumstances, and the effect in question occur, the presumption is that the new antecedent has had its share in the production of the event. A slight change in Mill's formula will suffice to illustrate this. Let us suppose our antecedents and consequents, instead of being strictly limited, to be indefinite in number; we may then, following Dr. Venn's suggestion, illustrate the phenomena which are unknown to us, or to which we have paid no particular attention, by dotted lines. The formula may then stand as follows:—

BC	ABC
<i>bc</i>	<i>abc</i>

In the first or negative instance, we have antecedents and consequents of which some are known, some unknown; but we are unable to discern A among the antecedents or *a* among the consequents. Now let the antecedent A be introduced, and we at once have *a*. There is a possibility, of course, in the supposed indefiniteness of our knowledge, that some unsuspected circumstance has crept in, and that this, instead of A, is the condition which has led to the appearance of *a*. If we have reason to fear that such is the case, or are unable

to vary one circumstance only at a time, the probability of our causal sequence is *pro tanto* diminished. These are well-known hindrances in what Pasteur has truly called the difficult art of experimentation. On the other hand, if our previous knowledge of the region of inquiry is so great as to afford us a high probability that the introduction of A is the only difference, or the only material difference, then we have an equally high probability that A is a factor in the production of *a*. The Method of Difference, therefore, important as it is, cannot be regarded as a criterion of complete proof in every case of experiment; we must recognise an increase of probability in proportion to our exact knowledge of the antecedents in the negative and positive instances.

It is at least something to have established a probability that A is the cause, or part of the cause, of the effect in question. But we need not stop here. It is our business to exclude from our antecedents all indifferent circumstances, and we may endeavour to do this by a series of further experiments, narrowing the relevant antecedents, and at the same time confirming the connexion of A with *a*. Thus we may test the antecedent B, comparing sequences in which B is absent with others in which it is present. If we succeeded in obtaining the sequences—

ABC	AC
<i>abc</i>	<i>ac</i>

—we should then learn, since B is absent in the second instance, that *a* has been produced without B. Or, on the other hand, if *a* failed to appear in the absence of B, we should infer that B is a coefficient in its production, A by itself being insufficient for the purpose. The same process of elimination or retention might be extended to C, and to other antecedents into which a fuller inquiry might be made; and we should thus learn what circumstances, within our experience, have really contributed to the production of *a*, and what may be excised as non-essential. This gradual process is not so speedy as Mill's canon and examples suggest, but it is actually resorted to, both in our ordinary and in our scientific inferences.

Gathering up the results of these observations, I would propose the following Canon:—

If, into circumstances found to be incapable of producing a certain event, a new phenomenon or set of phenomena be introduced, and the event in question occur, the new phenomenon or set of phenomena is the cause, or part of the cause, of the event. If the removal of any given antecedent makes no

difference in the occurrence of the event, that antecedent is irrelevant, while antecedents which cannot be eliminated without eliminating the event are causal. And the Universal Law of Causation compels the inference that, if these conditions be repeated, the effect will also occur.

A Method which is exemplified in every successful experiment needs little or no illustration. But it may be worth our while to examine the actual working of the Method in two of the simplest examples chosen by Mill. "When a man is shot through the heart," he tells us, "it is by this Method we know that it was the gunshot which killed him: for he was in the fulness of life immediately before, all circumstances being the same except the wound." This is offered as an example of inference by a single application of the Method of Difference. In such a case it is probable that we should merely apply, deductively, a general truth of which we are already possessed; but to give the method fair play, let us suppose that the occurrence has been witnessed by some one who, like Crusoe's man Friday, has hitherto known nothing of the use of firearms, and is ignorant of the law in question. The exceptional antecedent and consequent would at once arrest his attention, and he would conclude—and rightly—that they were causally connected. But what causal *law* would he be entitled to draw from this instance of the Method of Difference? If he were asked—Would every gunshot wound cause death? must the wound be through the heart to effect this result? would death be caused in all cases by a similar wound? or was it owing in part to the man's peculiarity of constitution?—he could not legitimately answer these questions from the single application of the Method. His experience of wounds otherwise inflicted might suggest answers; but this would take him beyond the negative and positive instances actually before him. The only inductive law that he would have a right to assert would be that, in precisely similar circumstances, the gunshot wound would have a similar result; but he has still to learn, by further investigation, what circumstances are essential, what indifferent.

Take again the illustration which has been curtly, but effectively, criticised by Mr. Bradley. "As a truth made known by the Method of Difference," says Mill, "'Fire burns' might have sufficed. Before I touch the fire I am not burnt; this is BC; I touch it and am burnt; this is ABC, *a* BC." Is any one, on being once burned by a fire, entitled to pass to the large generalisation that all fire burns,

or even that it will burn him when touched? Certainly not. Logically, he is entitled only to the inference that a similar fire, in similar circumstances, will burn. No doubt the child, on being burned by a fire, will dread anything bearing a similar appearance, though in many respects dissimilar; burned in consequence of placing his finger in a fire in the grate, he will dread the flame of a candle. But though this may be called inference it is not proof. Similar expectations, or inferences, will often lead the child into error. Let him touch a heated stove where the fire is concealed. He is burned, and he may infer that he will always be burned on touching a stove, the true inference being that touching a stove under certain conditions will burn him. Or again, he has experienced a sensation of sweetness on tasting sugar; he may expect a similar sensation from any other substance of a similar white appearance; but he finds out his mistake if he tries the salt-cellar. Thus, while a single instance warrants the conclusion that antecedents which include the fire will suffice to burn him, a process of elimination is required to ascertain what the essential conditions are. Such a process of continued elimination goes on throughout our ordinary inferences, while in science prolonged and varied experimentation is the rule if we wish to discover causal uniformities.

DOUBLE METHOD OF AGREEMENT.

This Method, called by Mill the Joint Method of Agreement and Difference, or the Indirect Method of Difference, is said by him to consist in "a double employment of the Method of Agreement". It has thus acquired the simpler and, as I think, preferable title of the Double Method of Agreement. The principle of the Method is sound. In the Method of Agreement, when a phenomenon is always found to be associated with another, there is a probability that they are connected by a law of causation. In the Double Method, we extend our survey to instances where one phenomenon is absent, and, finding the other phenomenon also absent, the probability of a causal connexion between the two is strengthened. To use the apt expressions of Dr. Bain, we have not only agreement in presence, but also agreement in absence. There is an analogy between the two aspects of the Method, and the positive and negative instances of the Method of Difference; hence the titles preferred by Mill. But here, again, questions arise as to the value of the Method and the best expression of the Canon. As stated by Mill, it presents some difficulty:—

"If two or more instances in which the phenomenon occurs have only one circumstance in common, while two or more instances in which it does not occur have nothing in common but the absence of that circumstance; the circumstance in which alone the two sets of instances differ is the effect, or the cause, or an indispensable part of the cause of the phenomenon".

Mill has given us no symbolical formula of the Method, and there are differences of the interpretation.

1. The Method has been sometimes illustrated by the following formula:—

ABC	ADE	BC	DE
<i>abc</i>	<i>ade</i>	<i>bc</i>	<i>de</i>

Here, on one side, are instances of agreement in the presence of the phenomena A and a; on the other side, instances of agreement in their absence. But, after all, this is only a twofold application of the Method of Difference; and, if this had been Mill's meaning, its statement as a separate Method would have been superfluous.

2. The Method has been held to be more correctly symbolised thus:—

ABC	ADE	FI	KL
<i>abc</i>	<i>ade</i>	not followed by a	

We have here, on one side, instances of the Method of Agreement, while on the other we have instances agreeing with each other in the negation of A and a, and having no positive factor in common with our first two instances.

3. A variation may be made in this formula if, while excluding A and a from our negative instances, we admit into these other elements which have appeared on our affirmative side. Thus we might have—

ABC	ADE	BDMN	CEOP
<i>abc</i>	<i>ade</i>	not followed by a	

The last two instances may be regarded as negative, since they exclude the phenomena A and a which form the subject of our inquiry. They admit other elements from the affirmative side; and yet the formula is differentiated from that of the Method of Difference by its failure to present BC or DE together, apart from A.

4. Lastly, Dr. Venn's rendering of the Method is shown in the following formula:—

Affirmative Instances.

ABCDE
ADEF G
AFGH I
AH IJK

followed by a

Negative Instances.

BCFG
DEHI
FGJK
HIDE

not followed by a

This formula, also, is distinct from that of the Method of Difference, since the elements of the affirmative instances, when separated from A, are otherwise disintegrated and scattered throughout the negative instances in new combinations. The negative instances, it will be noticed, contain no element which has not already figured on the affirmative side, and at the same time the affirmative elements, with the exception of A, are completely exhausted by their use in negation. Given such instances as these, the conclusion is that A has in each case been the cause of *a*.

The curious thing is that not one of these formulæ can be reconciled with Mill's Canon. We are asked by it to find, on the negative side, instances in which the phenomenon under investigation, say *a*, does not occur, and which have nothing in common save the absence of some other circumstance, say A. But is this possible? Our negative instances must agree at least in the absence of an infinity of things besides A; and though we may exclude common antecedents from our artificial formulæ, it does not follow that a similar exclusion may obtain in the combinations of facts. As Dr. Venn remarks: "Any two instances whatever that we might happen to select could not fail to agree in many points of presence, and must agree in simply indefinitely numerous points of absence". Mill himself tells us that it is impossible to be assured that the instances negative of *a* agree in nothing but the absence of A. We must therefore discard his Canon with its impossible requirements, and seek to arrive at the true meaning and value of the Method in some other way.

Taking as our guide the statement that the Method consists in a double employment of the Method of Agreement, we may set aside the first formula as proceeding on the principle of the Method of Difference, and requiring no separate Canon. Were we in possession of instances similar to those embodied in the formula, we could desire no more striking examples of the cogency of the superior Method. The second and third formulæ are nearer the mark, and, with some amendment, may be brought under the Method which we are now considering. Bearing in mind what has already been said of the Method of Agreement, our positive instances may be thrown at once into the form:—

ABC ADE

followed or accompanied by *a*

We must acknowledge the presence of an indefinite number of phenomena which we have no right, at the outset of an inquiry, to dismiss as *primâ facie* irrelevant; and again,

far from being content with two instances such as are here symbolised, it is our business to assemble as many instances as possible in which A or *a* is found to occur. On the negative side we may fairly include such instances, if we can obtain them, as:—

FI KL BDMN CEOP
 not followed or accompanied by a

The important point is that in these instances we find neither A nor *a*; and the absence of *a* appears the more striking from the fact that some of the phenomena to which our attention has been called in the positive instances are found here also. At times we may be unable to separate the phenomena even to this extent. But in any case, not being sure that we have all the relevant facts before us, we must multiply our instances. If we are called upon to muster as many positive instances as we can, it is even more imperative that our survey should be as wide as possible when we profess to deal with negative instances. A few instances of agreement in the presence of phenomena are of very slight value; a few instances of agreement in their absence are not of more value, but rather of less. We have to satisfy ourselves, if it be possible, that A never occurs without *a*, or *a* without A. We shall not succeed in doing this thoroughly unless, to use Mill's expression, we exhaust the field of negation; and this, as he says, is more difficult than to exhaust the field of affirmation. We may find it needless to extend our search beyond a definite region of inquiry; but experience alone can tell us what this region precisely is. Within our proper universe of discourse, be it limited or unlimited, our survey cannot be too extensive.

If the Method be thus understood its Canon may be expressed as follows:—

When an antecedent and a consequent have always been conjoined within our experience, or when phenomena have always been found to accompany each other, while we have failed to find any instance in which one has occurred save in conjunction with the other, there is a probability that they are connected by a law of causation; and this probability increases with the number and variety of positive and negative instances.

While there is a close similarity between this and the Canon already suggested for the Method of Agreement, the peculiar strength of the Double Method lies in its enumeration of negative instances. If, for example, we can assert that a given consequent occurs whenever a given antecedent has

appeared, and that it is absent whenever that antecedent has been absent, we have reason to infer that the antecedent is a condition without which the consequent cannot occur, or at least that it is connected with it by some invariable law of causation. Here we are met by the characteristic difficulty of proving a negative. Still, the probability of an invariable causal connexion between phenomena is greatly increased, when a large and varied assemblage of instances has failed to disclose one in which either phenomenon has appeared without the other. The Double Method is most valuable when our previous knowledge permits us to limit our researches to a definite field which has been well explored. At the best, however, it is a Method of observation, not of experiment, and therefore does not attain the cogency of the Method of Difference.

Dr. Venn's interpretation still remains to be noticed. If we could obtain instances in nature exactly corresponding to the conditions of his formula; if we could know that we had taken into account all the possible causes; and if we were sure that there is no unnoted factor common to all the affirmative combinations and capable of uniting with A to produce the effect; then we should be certain that A is the cause for which we seek, and that there is no other cause capable of producing *a*. Since, however, we are not in this happy position, the formula is, as Dr. Venn admits, highly artificial; we are never able to reach the ideal perfection of proof which it sets before us. The great objection to such ingenious combinations is that they cannot be applied in practice. The Methods which we require are not of this hypothetical character. We wish to elicit Methods which are actually employed by seekers for truth, and to estimate the value of compliance with their conditions.

DOUBLE METHOD OF DIFFERENCE.

To establish a strictly invariable connexion between a consequent and definite antecedents, the Method of Difference must be supplemented. That Method tells us that, on a certain combination of antecedents, a phenomenon will be produced, but it gives us no right to infer that it cannot be produced otherwise. The difficulty of a possible plurality of causes is probably due to the absence on our part of a sufficiently penetrating analysis, or to failure in the thoroughness of our elimination. Still, from a practical point of view, we know that we are often able to produce a desired event in various ways. If, however, after a wide investigation,

observation and experiment fail to disclose any instance of the phenomenon in question save as a result of one set of conditions, we have a probability that the phenomenon cannot be produced otherwise. Such an extension of the Method of Difference, analogous to the extension of the Method of Agreement already dealt with, may be fitly called the Double Method of Difference. It may be expressed in the following Canon:—

When, by the Method of Difference, we have established a causal law connecting certain conditions with the production of a phenomenon, and when, further, we have failed to discover any case in which the phenomenon occurs without these conditions, there is a probability, increasing with the extent and variety of our negative instances, that the phenomenon can be produced in no other way.

By the employment of this Method, we may be able to establish a strictly uniform connexion, enabling us to pass from the appearance of a phenomenon to its cause as readily as we can prophesy that, on the concurrence of given conditions, the phenomenon will appear. The Method presupposes the simple Method of Difference and goes further; and it must therefore be distinguished from the Double Method of Agreement, which presupposes only the simple Method of Agreement before proceeding to marshal its negative instances.

A few examples may be given. The floating matter in the air, believed to contain germs, has been connected experimentally with the organisms of putrefaction; a sterilised infusion which remained pure as long as the floating matter was excluded from it is found to be peopled with these micro-organisms after its admission. Experiments of this kind furnish the negative and affirmative instances necessary to the Method of Difference. But the proof which is enough to validate a causal connexion between the floating matter and putrefaction does not suffice to show that these living organisms cannot be produced otherwise. A very wide trial of instances is needed to warrant the conclusion that these organisms cannot, at least in the present stage of the world's history, be produced from inorganic matter. So vast indeed is the negative side of the inquiry, that the scientific argument in favour of biogenesis has chiefly resolved itself into disproof of the alleged facts that, in certain circumstances, life has been produced without the instrumentality of prior life. That living forms can be evolved from prior forms of life we know; the burden of proof that they can be produced

otherwise rests on those who make the assertion ; and in the absence of satisfactory evidence to that effect we are justified in concluding *omne vivum e vivo*. An apt illustration of this double method may be taken from Lotze, who points out that, after we have discovered the cause of a given effect, the proposition that it is the sole cause capable of producing that effect can only be ascertained by some method of exclusion. "A chemist," he says, "observes that a particular element C yields the reaction E ; he then finds that a strange body, which he is examining for the first time, exhibits the same reaction E ; he infers from this that the body in question is C, and this inference, so far from being based on the simple conversion of that observation, rests on the consciousness which he has of having already tested all the elements to be found on earth, and of having got this particular reaction E from none of them except from C." Here, in the first place, the chemist is in possession of a law connecting C and E—a law obtained by the Method of Difference ; but the conclusion arrived at requires a far wider experimental knowledge of negative instances than that Method necessarily implies. The argument from spectrum analysis, also referred to by Lotze in this connexion, has been chosen by Professor Fowler as an illustration of the Double Method of Agreement. It appears to me to fall rather under the Double Method of Difference. Finding that we are able, experimentally, to produce lines occupying given positions in the spectrum by the introduction of certain materials, and that we cannot produce the lines without these, we infer the presence of like conditions when exactly similar lines are produced by rays falling from the sun or from stars. It is obviously by experiment that we produce the lines in the spectrum in the first instance, and by repeated experiment that we satisfy ourselves that these lines can be produced by no other means. The extension of our conclusion from terrestrial to celestial bodies depends partly on analogy, and still more on deduction from theories of cosmic evolution. If we agree, therefore, to regard the Methods of Agreement as methods of observation in the stricter sense, it is clear that our argument proceeds, to begin with, under the Method of Difference ; but in so far as it concludes that the presence of the lines is in all cases an evidence of the same conditions, that method is transcended, and our procedure requires for its vindication the "method of exclusion" which I have called the Double Method of Difference.

METHOD OF RESIDUES.

Mill puts his Canon thus :—

“Subduct from any phenomenon such part as is known by previous inductions to be the effect of certain antecedents, and the residue of the phenomenon is the effect of the remaining antecedents”.

In the illustrative formula, we are invited to begin with the antecedents *ABC*, known to be causally connected with the consequents *abc*. We are supposed to know also that *A* is the cause of *a*, and *B* of *b*. Putting these together, we infer that *AB* is the cause of *ab*. There remain only the antecedent *C* and the consequent *c*, and therefore these must be connected as cause and effect. The induction here lies wholly in the inferences which are presupposed. We start with a complex law of causation; prior induction has also made us acquainted with the effects of *A* and *B* separately; we arrive deductively at the effect of *AB* in combination,—a procedure, by the way, which is warranted only where causes compound their effects; and by a simple process of subtraction we learn the necessary connexion of the phenomena which remain. Apart from prior induction, the whole argument, from beginning to end, is of a kind which Mill has elsewhere characterised as deductive. If this statement of the process be correct, it is not entitled to a place among the Methods of Inductive Inquiry.

Mill's Canon, however, is at once overthrown, and the artificial simplicity of his symbols exposed, by his remark that we can never be quite certain that *C* is the only antecedent to which the residual phenomenon can be referred. And when we turn to actual instances of the employment of the Method given by Mill and other writers, we find that its fruitfulness consists in its instigation of the search for causes. We are not in the position of being able to explain a residual phenomenon by a cause which is already under our hand; when such a phenomenon lies before us, its explanation is still to seek. If we desire to explain complicated phenomena, our task will certainly be simplified if we can allot part of the phenomena to known causes. Our difficulty then lies with the residual phenomena, for which it is our business to find a cause or causes as best we may. In some cases, we may succeed in connecting a residual fact deductively with some law or laws already known, but which have not hitherto been applied to it; in others, an entirely new investigation may be necessary, and, if successful, the result may be either the discovery of some cause hitherto

unknown, or the detection of a known cause the presence of which, or its connexion with the effect, was previously unsuspected. So far from allotting a phenomenon to a definitely known antecedent C as its necessary condition, the imagination is busily at work in devising possible explanations ; and the hypotheses thus struck out may be tested experimentally or deductively. A Canon or criterion of proof is inapplicable in the case of a Method such as this, which simply provides us with a direction, in special circumstances, for further inquiry. From this point of view, the character and value of the Method of Residues cannot be better described than in the words of Herschel : " Complicated phenomena, in which several causes concurring, opposing, or quite independent of each other, operate at once, so as to produce a compound effect, may be simplified by subducting the effect of all the known causes, as well as the nature of the case permits, either by deductive reasoning or by appeal to experience, and thus leaving, as it were, a *residual phenomenon* to be explained. It is by this process, in fact, that science, in its present advanced state, is chiefly promoted. Most of the phenomena which nature presents are very complicated, and when the effects of all known causes are estimated with exactness, and subducted, the residual facts are constantly appearing in the form of phenomena altogether new, and leading to the most important conclusions."

METHOD OF CONCOMITANT VARIATIONS.

The Canon of this Method is cautiously stated by Mill :—

" Whatever phenomenon varies in some particular manner whenever another phenomenon varies in some particular manner, is either a cause or an effect of that phenomenon, or is connected with it through some fact of causation "

The last alternative is so wide that this Canon may be accepted as it stands. Since, however, a cause is the sum of many conditions, the variations of sequent phenomena can never assure us that a single antecedent phenomenon is, strictly speaking, the cause ; and I should be inclined, in a more exact statement, to substitute the word " condition " for " cause," slightly altering the remainder of the clause in accordance with this change. The Canon would then read :—

Whatever phenomenon varies in any manner whenever another phenomenon varies in some particular manner, is either a condition of that phenomenon, or is conditioned by it, or is connected with it through some fact of causation.

It should be understood that the Method does not give us a rigid proof of causal connexion, and that the probability which it establishes may vary from a low to a very high degree. As Mill remarks in a later chapter, the Method is "but a modification either of the Method of Agreement or of the Method of Difference". In the former aspect, where the concomitant variations are simply observed whenever they can be found, the Method is capable of very various degrees of probability; in the latter, where experiment is resorted to, it may enable us to link together cause and effect by a law which rises to the level of practical certainty. It may be used either to disclose a causal uniformity, or to determine a quantitative law of variation where a law of causation is, on other grounds, known or suspected.

Were we concerned only with the highest conditions of proof, it might be unnecessary to signalise the whole of these methods; in such a case we might be content with the Methods of Difference and of Concomitant Variations, which Wundt has sought to bind together, in a single Canon. But it will, I think, be generally admitted that there is an advantage in setting forth, in some detail, the various stages of inductive inquiry. For the sake of brevity, I have been sparing in my illustrations of the working of the Methods; but I may here give a comparatively simple example of the manner in which they may be used in the course of the same investigation. In inquiring into the cause of anthrax, it is found in all cases in which sufficient inquiry has been made, that the disease has been accompanied by the presence, in certain parts of the organism, of the bacillus now known as the *bacillus anthracis* (Method of Agreement). So far, however, it is not proved that the bacillus is the cause of the disease; for all that appears, the morbid state of the organism may have exposed the animal suffering from the disease to the inroads of the microbe. Again, a wide and varied examination has failed to find any case of the bacillus appearing in these parts without the manifestation of the disease (Double Method of Agreement). The probability of a causal connexion between the two is thus strengthened; but though the germ theory of disease which now prevails suggests the causal agency of the bacillus, this is not conclusively shown by the Methods to which we have so far appealed. Experiment is resorted to; the microbe is isolated from the blood of an infected animal, and it is found that, under certain conditions, its injection in a healthy animal results in the disease (Method of Difference). We are now in possession of a causal uniformity, and know that,

with the ascertained conditions at our command, we can evoke the disease. Further, we find ourselves powerless to produce the disease in any other way ; if it be conjectured, for example, that not the bacillus, but its products, have caused the disease, the hypothesis can be tested by experiment and set aside ; other conditions to which the animal may be exposed, such as the introduction of other species of microbes, fail to give rise to this particular disorder ; and we conclude therefore that the disease has its specific germ, without which it cannot exist (Double Method of Difference). Though the Method of Difference, and this Double Method, may be conveniently stated separately, the materials for the application of both have, no doubt, been accumulated to a great extent simultaneously. Still further, the bacilli, by a process of cultivation, are capable of being modified ; and it is found experimentally that the attenuated virus gives rise to a modified form of anthrax. The illness is found experimentally to vary with the degree of attenuation of culture (Method of Concomitant Variations) ; and it is ascertained what inoculation may be adopted with only a slight and temporary loss of health, and at the same time with security to the animal against attack for some time to come, even if subjected to the injection of the strongest virus.

In conclusion, while the subject of Hypotheses may be considered separately as a matter of convenience, it should not be forgotten that they are continually employed throughout the inductive methods. It is a mistake to suppose that hypotheses are resorted to only when these methods fail. In all observations and experiments by which the mind seeks to discover truth it is guided by conjectures. There must be some reason why we observe in one direction rather than in another, or select one out of many possible experiments. The conjecture or hypothesis in either case may be vague indeed. When we try an experiment "to see what will come out of it," we may be guided only by the conjecture that some knowledge may be gained, or some interest served, by the experiment in question ; but even in such a case we are urged on by an imaginative stimulus. In the more elaborate inquiries of science, the power of the scientific imagination is, in our days, abundantly recognised and honoured.

IV.—ON THE DISTINCTION BETWEEN REAL AND VERBAL PROPOSITIONS.

By E. T. DIXON.

THERE is one question, and it seems to me about the most important question which Logic is competent to determine, which has never, so far as my knowledge of the literature of the subject extends, been adequately discussed by professed logicians. Every one will admit that language, properly used, is capable of conveying information; that is, that some propositions do definitely assert matters of fact, either truly or falsely. On the other hand it is equally evident that some propositions have not this function, as for example the propositions commonly referred to by logicians with a certain contempt as 'identical propositions,' and definitions which only tell us something about the way it is proposed to use certain terms. It is not a little remarkable that the ordinary text-books hardly discuss the question what truths are real and how are they to be distinguished from those which are merely arbitrary—indeed they are not even agreed as to the answer, for it sometimes happens that what one logician maintains to be an assertion giving real information, another regards as an identity or definition. This is notably the case with what are called the fundamental Laws of Thought. But the discussion of this question is distinctly within the province of Logic, for it is intimately bound up with the subjects of Definition and Existential import which are discussed more or less fully in all text-books. It is also closely connected with the distinction which some logicians recognise between Formal and Material truth, which Mill dances round in a manner so peculiarly his own in his examination of Sir W. Hamilton's Philosophy (ch. xxiii.). Mill here refuses to recognise anything but real truth, and of course if he chooses not to apply the name 'truth' to such an assertion as that any two quadrics in a plane intersect in four points, he cannot be compelled to do so—but such assertions cannot on that account be excluded from the purview of Logic. The fact is that there is an important distinction between real and arbitrary truths, though neither Mill nor his opponents in argument seem to have grasped it in their discussions about formal and material truth. It was said, vaguely, that formal truth consisted only in consonance

with the laws of formal thought ; it was said that ' what is non-contradictory and consequent is formally true '. But this hardly goes to the root of the matter. Are the ' laws of thought ' themselves formal or material truths ? If a formal truth is consequent, *i.e.*, deduced from some other proposition, does it matter whether that proposition is itself formal or material, true or false ?

But it would be useless to refute at length views which perhaps no one now entertains. It will be better for me to state as concisely as possible the views I support, and even if it should turn out that they are already embodied in some text-book that I have not come across, no harm will have been done. But if they should not find acceptance, I hope some older logician will take the opportunity of expounding the orthodox views, and explaining why the ordinary sources of information are so singularly silent on the subject.

I believe that, whatever it may be in theory, it is practically impossible to conceive a thing without any attributes, or an attribute except as pertaining to some thing. Whenever any concept is clearly before the mind, it always has both denotation¹ and connotation. But we may confine our attention to the one, and treat the other as an immaterial accessory. Thus we might make an argument about colours, picturing to ourselves the colours as painted on boards, and yet recognise that the boards, and even the paint, were immaterial to the argument, so that the conclusions applied equally to any other similarly coloured objects. This fact has been noticed and objectified into a Principle (with a capital P) of Equivalent Forms ; but there is nothing to be gained by obscuring a simple fact under such a high-sounding title—the fact simply being that the argument was concerned with connotations only, and might have been conducted verbally without assigning any denotation whatever to the words, and that therefore the conclusion is equally applicable to any denotation which the words may bear.

The process of separating an argument about connotation from irrelevant denotation may perhaps be carried out in more ways than one. The most obvious way seems to be as follows. Names which are well understood must be regarded not merely as marks of real or imaginary things, nor merely as marks of attributes, but as connecting links between certain things and certain attributes ; so that to under-

¹To avoid circumlocution I shall always speak of ' things ' as denotation (whether objective or subjective) and attributes as connotation. Thus I should say that ' whiteness ' connotes the same attribute as ' white things,' not that it denotes what ' white things ' connotes.

stand any term well is to possess real information. Thus every term, by the time it is well understood, possesses both connotation and denotation. It is also clear that its meaning is to some extent arbitrary, and may be settled by its definition, but that the definition once laid down there remains another part of the meaning, the discovery of which is a gain of real knowledge. We may lay it down arbitrarily that a given term shall denote any given set of things, or connote any given set of attributes, but having done so it is no longer in our power to determine what attributes it shall connote, in the first case, or what things it shall denote in the second. The arbitrary part of the meaning of a term I shall call its *definition*, and the remaining part of its whole meaning its *import*. Thus by its definition I mean either the extension of the term or its intension, whichever is laid down arbitrarily, including not only those items of denotation or connotation explicitly mentioned in the assertion which determines the meaning of the term (which may be called the 'stated definition'), but every item which may be formally shown to be implied by that assertion.

It follows from this that any item which can be formally deduced from the stated definition of a term is just as arbitrary as the stated definition itself was, and if we have any assertion whose truth can be deduced from the stated definitions of its terms, it is not a real assertion, and conveys none but verbal information; and conversely, if we wish to ascertain whether a given proposition 'A is B' is real or only verbal we must examine the stated definitions of 'A' and 'B' and see whether they are formally dependent upon one another or not. If they are independent the proposition is a real one, whether true or false: but even if they are not, the proposition may still be useful, as the expression of a verbal connexion which was not at once obvious from the stated definitions of the terms. Further, as the connexion between denotation and connotation cannot be arbitrary, for we cannot arbitrarily decide whether certain things shall, or shall not, have certain attributes, we can never deduce any facts of denotation from definitions by connotation, or *vice versâ*, nor can any conclusion be deduced from two definitions, one of which is by denotation, and the other by connotation, without the aid of some real proposition to connect the two. Consequently the only use of formal reasoning may be said to be to elucidate the full effect of the stated definitions of terms; and to argue formally with terms which are 'well understood,' that is, whose definitions and imports are well known, is waste of time. For if the truth of any

assertion about such terms is not at once obvious, no process of formal argument can possibly establish it.

If a proposition is advanced and disputed, it may be that the disputants are agreed as to the definitions of its terms, and are really disputing a matter of fact. If so the dispute must be settled by other methods than those of formal logic. But as a rule no formal definitions will have been laid down, and it is then open to either disputant to call on the other to define his terms. If one of them does so a formal argument may follow as to whether the definitions are or are not independent, *i.e.*, whether the proposition was or was not a real one. It may even be shown to contain a contradiction in terms. If neither of the disputants advance definitions, they may indeed seek to show that the proposition depends on some other proposition or propositions, but ultimately the difference of opinion must turn out to rest either on the truth or falsity of some real proposition, or on a difference as to the meaning of certain terms, neither of which differences can be determined unless formal definitions are given.

Now the same term may often be defined in different ways, so that the same proposition may in the mouth of one speaker be real, and in that of another 'a truism' or verbal assertion. But if any one wishes to maintain that a given proposition is a real one, the *onus probandi* lies with him—he has only got to state the definitions of his terms and show that they are independent and the thing is done. If he cannot do this the proposition itself may be taken as partially defining one or more of its terms, for if it is accepted no meaning can afterwards be assumed for any doubtful term it contained, in virtue of that acceptance, which cannot be formally shown to be implied by it. For example, it has been maintained that Euclid's Axiom 'Two straight lines cannot enclose a space' is only a partial definition of 'straight line'. This would be correct if Euclid had not previously given a definition, but as this definition implies that a line is a real object having length without breadth it cannot be arbitrarily asserted that there is a kind of line such that two of them cannot enclose a space. Again, if it is to be maintained that Newton's laws of motion are real propositions, independent definitions must be found for the terms 'force,' 'uniform motion,' and so on, for until such definitions have been given all the 'laws' do is to tell us something about the way Newton uses those terms. It is not of course to be inferred that the conclusions of Astronomy, in which calculations based on these laws are made use of, convey no real information, but the reality is given to these

conclusions quite apart from the laws of motion, by such laws as that of gravitation which is real, and not a truism.

This way of looking at reasoning is so simple, and probably so nearly the way most practical men look at it, that it may seem unnecessary to dilate upon it. But as a matter of fact it is very different from the methods expounded in the ordinary text-books of logic. Dr. Venn, for example, in his *Empirical Logic* commences by stating a number of 'Postulates' on which he bases his system. The third of these is to the effect that words used in reasoning are to be taken to have the same meaning for all disputants. If this means that all words are to be taken to be 'well understood,' or at least equally well understood to all the disputants both before and after the argument, we have already seen that it would render formal reasoning entirely superfluous. In another place he says: 'By admitting that the demand for a definition is a sort of *right* instead of a merely occasional concession to our mental indolence or frailty, logicians inevitably provoke a continued repetition of such a demand, and then the question arises: Where are we to stop? . . . The true answer is: You have no right to a Definition at all: the mere fact that you ask for one is in itself an admission of the general truth of our postulate about language. . . .'¹ Rather, I should say, it is the refusal of the definition which is based on the postulate; the demand directly implies its falsity, in the given instance at least. Dr. Venn does indeed admit that it is sometimes false; where I differ from him is in holding that if it were otherwise, formal logic would have no *raison d'être* at all. The answer I should give to his question: Where are we to stop? is: Whenever we come down to terms about whose meaning we are sufficiently agreed, *i.e.*, which may be considered 'well understood' for the purpose in hand. Of course his postulate is so far true that if there were no such terms argument would be endless; but if there were no others it would be useless. Again, Dr. Venn believes that purely verbal arguments are extremely rare. Even if he meant arguments entirely unconnected with real applications, the whole of pure mathematics and symbolic logic may be regarded as purely verbal arguments, and so also might probably the greater part of the arguments of past and present logicians and metaphysicians. Possibly, nay probably, if I had the opportunity of discussing my differences of opinion with Dr. Venn, the argument would in the end turn out to be purely verbal. Mr. Johnson has maintained that there is an essential difference

¹ *Empirical Logic*, p. 280.

between the subject and predicate of a proposition, in that something can always be predicated of a subject, whereas there may be predications which cannot be made of any subject.¹ He says 'a subject is that of which something must be predicable'. This, surely, cannot be anything but a verbal assertion. I accept it as a partial definition of 'subject'. Naturally I should have expected after this that a 'predication' was that which had been predicated of a subject? But on further examination it appears that the difference between subject and predicate in Mr. Johnson's view is far deeper than appears by saying there are predicates without subjects though there are no subjects without predicates. For to him a subject is a noun, a predicate only an adjective or equivalent phrase. On this interpretation the syllogism could not be illustrated by Euler's diagrams! It is evident therefore that if I had entered into an argument with Mr. Johnson about the reciprocal position, or otherwise, of subject and predicate, it would have turned out to be a purely verbal one, and Mr. Johnson could at any time have put a stop to it by stating his definitions of 'subject' and 'predicate'.

If an assertion is accepted by both parties to a discussion it may be unnecessary to define the terms, that is it may be assumed (to save time) that in this case Dr. Venn's postulate holds, though the deductions subsequently drawn from the assertion may show that after all the assumption was rash. But if ever an assertion is disputed the first step should always be to demand or give definitions, or at least ascertain whether the assertion is intended as a truism or not. For the process of giving or discussing the definitions will do all that formal logic can do to clear up the matter in dispute. Consider for example the assertion, 'Thought is impossible without language'. In the senses in which the words thought and language are commonly used this assertion is not only not a truism but it is not true. I might define 'thought' as 'a train of concepts passing through the mind which are noted and directed by consciousness'. The ordinary meaning of language might be stated to be 'any code of signs by which the sequence and relation of concepts in the mind are communicated from one individual to another'. This definition is sufficiently wide, as it may include a canine language, or a language of ants. But it would be absurd to suppose that if a being had never tried to communicate with his fellows that he could never have noted or

¹ MIND, O.S., No. 1.

directed the train of concepts passing through his mind! But by a slight change of definition it is easy to make the original proposition not only true but a truism. If we include in language 'any code of signs, whether objective or subjective, by which the sequence and relation of concepts in the mind are noted and directed,' it follows that there can be no thought without such. But it may be doubted whether in this case the proposition would justify the conclusions which philologists seek to draw from it.

But there is a yet more important consequence which results from the view of the arbitrary nature of formal logic I am advocating. It is that the old classifications of propositions and sciences must be modified. The old division of propositions was into analytic and synthetic of knowledge into *a priori* and *a posteriori*. But we have seen that the primary distinction, from my logical point of view, at any rate, between propositions is that between real, and arbitrary or verbal propositions; and sciences must therefore be classified according as their conclusions belong to the one category or to the other. A truism being purely arbitrary cannot be called a 'judgment' at all, either analytic or synthetic. 'Judgment' might indeed be defined as the act of assenting to real assertions, or of admitting the connexion between certain connotations and denotations, and a science based on definitions alone calls for no act of judgment at all. Pure mathematics and symbolic logic are such sciences (when properly expounded); and hence the 'certainty' of their conclusions. Formal reasoning may assist us in forming a judgment by putting before us clearly all that is implied in the denotation and connotation we seek to connect, but it can never supply the connecting link. This fact of fundamental importance is frequently overlooked, even in the nineteenth century, and is still more frequently confused with that other fact of scarcely less importance, which is associated with the name of Bacon, namely, that we cannot discover anything about the objective world by a mere examination of our own subjective consciousness, and *a priori* reasoning. The knowledge we obtain by such introspection is very different from 'mathematical certainty'; it is very real knowledge; the so-called *a priori* judgments are many of them true judgments; but they are separated by as impassable a gulf from truisms, as objective facts are from them. For such subjective judgments are formed by direct apprehension and comparison of real concepts actually present to the mind. As long as care is taken to express them in language which shall not appear to give them an objective

character they may be asserted with absolute confidence, and yet are in no sense arbitrary. Though we cannot say with certainty that material space is 'Euclidian,' yet we can say absolutely that the space we are accustomed to conceive is such, and is not, for example, a Lobatchewskian space, or a space of four dimensions. Lobatchewsky and Riemann have not shown that when I picture to myself the figure of Euclid's I. 29, that picture may be different from what I suppose it to be, but only that if I try to realise my picture on the blackboard it may be that I shall not be able to do so. It is as absurd to think that it is possible to discover the nature of concepts by formal reasoning alone, as to think with Descartes that by forming concepts alone we can discover the nature of the objective universe.

It is unnecessary, and would be foreign to the purpose of this article, to emphasise the distinction between objective and subjective knowledge, between the more or less satisfactory hypotheses on the one hand, and the inadequate and inconclusive, but indisputable, knowledge on the other. This has been amply discussed by logicians elsewhere, but the points I wish to bring out, the essential distinction between both these kinds of knowledge, and purely formal conclusions such as those of mathematics, and the simple way in which any proposition may be relegated to the one category or the other, are, I think, deserving of more attention than they commonly receive at the hands of logicians.

V.—ASSIMILATION AND ASSOCIATION. (I.)

By Dr. JAMES WARD.

THERE is a perplexing want of uniformity among psychologists of the present day in the use of these terms, Assimilation and Association, or other terms equivalent to them. According to some assimilation or recognition is but a special form of association; according to others every instance of association presupposes and involves assimilation, which, therefore, they hold to be the simpler and more elementary process. This difference is due partly to a difference in the analysis and interpretation of the facts denoted by the word assimilation, but partly to a difference of terminology. The aim of this paper is to inquire into the causes of this obscurity, and if possible to do something towards removing them.

Nothing can be plainer than that association in strict propriety of language implies two or more distinguishable and distinct individuals; and is in this respect different from amalgamation or fusion, which both imply the merging of two or more bodies into a new complex or compound. Now if the nature of presentation were such as to allow of anything like a literal application of either or both these conceptions when we attempt to explain the various connexions and changes we find among our presentations, confusion need never arise. In political affairs, for example, we are never at a loss to distinguish an association or confederation from an amalgamation or union. The individuating marks are here definite, and, so to say, palpable. Not so with presentations: in this case there is much indefiniteness in the terms used, much that eludes us in the facts themselves.

First of all what constitutes identity in the case of presentations, or is there such a thing? Let it not be supposed that I wish to indulge in the easy feat of evolving subtleties out of the notion of identity. But it will be allowed, I presume, that whenever the word 'same' is used there must be some convention, tacit or otherwise, as to the sense in which it is to be understood. In these "association-controversies" I can find no such agreement. Sometimes a merely qualitative identity is implied, sometimes numerical identity, sometimes both, and sometimes neither. If a presentation is regarded as a single event, be it long or short, it can have

no identity of its own at all. Position in time will no more yield identity than position in space will yield direction. No two positions in time are the same and no position can recur. In so far therefore as assimilation and association imply different times, the presentational events of one time must be numerically distinct from those of the other. I have seen a certain face some score of times: call these events $p_1 p_2 p_3 \dots$. After a few times I am aware of recognising the face and presently say it is familiar. By many psychologists this immediate recognition—perhaps it would be exacter to say immediate cognition—of an object is symbolised as $A + (a_1 + a_2 + a_3 \dots)$ and familiarity explained as a function of the length of the series. This may be right or wrong: the only point to note at present is that $p_1 p_2 p_3 \dots$ and $a_1 a_2 a_3 \dots$ are terms belonging to wholly different categories. The event p_1 may quite well have been the cause of an effect a_1 that persists for a longer or shorter time, as the scar from momentary contact with a brand might do. But p_1 as an event is done with: a_1 , on the other hand, while it lasts may undergo such changes and be brought into such relations as its nature will allow. Among the changes may perhaps be reckoned that from impression to image, symbolised by reducing A to a : among the relations may perhaps be reckoned that of association with a contiguous b or with a qualitatively identical a_2 or a_3 . While in consciousness a_1 may be called a memory-image and when out of it a "disposition": all this is matter for further inquiry. The one thing settled is that $a_1 a_2 a_3 \dots$ are individuals that had their several beginnings on the occasions $p_1 p_2 p_3 \dots$.

One criticism is possible forthwith. On this view of a presentation, assimilation and association by contiguity cannot be brought under the same formula. The bar to this is not in the several presentations themselves: for $a_1 a_2 a_3$ are distinct and different as truly as $b c d$. So far the two formulæ, $A + (a_1 + a_2 + a_3 \dots)$ and $A + (b + c + d \dots)$, might be held fundamentally alike. Any presentations whatever, so far as their qualitative characteristics are concerned, may become associated by contiguity, provided only they "occur together or in close succession". This might happen to the individual presentations $a_1 a_2 a_3$ as well as to the individuals $b c d$. But then they would be associated because they were contiguous; not because they were similar. And the point is that they are supposed not to be contiguous: in short, contiguity, which is the essence of the one form of association, is precisely the one thing wanting in assimilation. To this a reply is sometimes made in this

wise: "No, contiguity is not wanting. It is certainly present in all cases of mediate recognition, *i.e.*, where direct analysis is possible. In these cases, the indices 1, 2, 3 correspond to definite attendant circumstances that make us as clearly aware of the members $a_1 a_2 a_3$ in recognition as we are of the members $b c d$ in contiguous association. Often too, when such attendant circumstances do not obtrude themselves, we can by more or less persistent concentration bring them into clear consciousness. Unless then we are to relinquish all belief in continuity, we must assume the presence of some such circumstances in sub-consciousness even in the case of immediate cognition; though we have then no means of discerning them."¹ The gravest objection to this reply is not that it has recourse to sub-consciousness in order to identify immediate cognition with mediate recognition: the fatal oversight is that though contiguity is concerned in mediate recognition it is *not* found where it is wanted. Contiguity does not link a_1 with a_2 and a_2 with a_3 ; but a_1 resolves into $a + b + c$; a_2 into $a + l + m$; a_3 into $a + p + q$; and so forth. Thus suppose I see a particular face (1) at some amateur theatricals, (2) at a boat race, (3) in the street. Contiguity will explain the revival of these several settings; but it does not help me one jot to understand how I get across from one to another on the assumption that the a 's, though qualitatively identical, are numerically distinct. To suppose that contiguity will carry us from one to the other is a blunder akin to expecting to pass from a "high level" line of rails to a "low level" without changing carriages, because at A there is a station for both. If, by some means or other, a_3 reinstates a_2 or a_1 , then contiguity may do the rest. But these means are still to seek. Meanwhile we have no right to use the same sign + to symbolise two processes as different as shunting and changing carriages. Provisionally then we may perhaps be allowed to represent these differences thus:—

$$\begin{cases} a_1 \\ a_2 \\ a_3 \end{cases} = \begin{cases} a + b + c \\ a + l + n \\ a + p + q \end{cases}$$

At this point, Prof. Bain, who has always insisted on the disparity of the two processes, may fitly interpose: "Undoubtedly any appropriateness in the term Association is confined to the law of Contiguity, under which the companionship of the related ideas is at its maximum of fulness; seeing that the occasion of their coming together by a pro-

¹ Cf. Wundt, "Bemerkungen zur Associationslehre," *Phil. Studien*, vii. p. 352.

cess of resuscitation is their being more or less frequently together previously. In Similarity, the resuscitation is not preceded by any previous companionship : the two members that have come together, as a consequence of their resemblance, may have been at the greatest distance from each other in our former experience. Hence, for Similarity, the word Attraction would be the most apposite, while unsuited to Contiguity."¹

It is quite clear that things that can attract each other, whether literally or metaphorically, cannot be events. At the same time, since Prof. Bain talks of *present* impressions reviving their like among *previous* impressions, it is also clear that he regards presentations as individuated by an event, that event, *viz.*, which we may call the psychophysical event *p*. We have, that is to say, still the same conception of a presentation. To understand the working of "the attraction of similarity," we must note that, on Prof. Bain's view, it is opposed by "the repulsion of diversity," wherever this is present. The presence or absence of diversity thus differentiates into two classes the facts that Prof. Bain brings together under the one heading of Association by Similarity. But his whole exposition is a refutation of his classification. To justify the use of association it is essential, as we have said, to begin and end with two individuals. Where repulsion is at work, in the cases described by Prof. Bain as cases of "similarity in diversity," this distinctness is conceivable and is in fact always found. But in "the case of perfect identity between a present and a past impression, the past," says Prof. Bain, "is recovered and fused with the present, instantaneously and surely . . ."² Thus, according to this doctrine, qualitatively identical presentations may end by becoming numerically identical, and we ought then to be beyond the range of association altogether.

But it now becomes pertinent to ask whether in this process of unopposed attraction we are justified in assuming that there are two presentations even at the beginning of the process. First of all, what precisely is this "past impression" that fuses instantaneously and surely with the "present"? Does it owe its individuality to an event, as the present is supposed to do? Let Prof. Bain speak for himself. "We have always taken for granted," he says, "that the recurrence of any object to the view recalled the total impression made by all the previous occurrences and

¹ On ' Association ' - Controversies, MIND, xii. p. 162.

² *Senses and Intellect*, 2nd edn., p. 466.

added its own effect to that total.”¹ “When I look at the full moon, I am instantly impressed with the state arising from all my former impressions of her disc added together.” There are pretty plain indications here of an entirely new conception of presentation, that, *viz.*, of a “total impression” or “state” arising from, or due to the effects of, all the previous occurrences of the object. A series of qualitatively identical *p*'s have gradually produced this one “state” or “total”. Obviously therefore it does not owe its individuality to a temporal mark. But if the several previous occurrences have not resulted in several presentations, in what sense can we regard the present “recurrence” as yielding a new presentation? If this recurrence is but a “reinstatement and deepening” of an absolutely identical impression “already made,” how can it be a presentation numerically distinct from that total? “But why cannot a new impression deepen an old impression?” it may be replied. It may, no doubt, when by “new impression” is meant a new application of the seal impressing, and by “old impression” is meant the impress effected by former applications. In the first sense impression is tantamount to occurrence; as in the words just quoted in which Prof. Bain speaks of all his former impressions of the moon's disc. Impression in the second sense is meant when he says: “I am instantly impressed with the state arising from” those previous occurrences of the moon's disc.

Though we have got but a little way in our investigation, it may be advisable to summarise, as the inquiry is intricate. We have found two different conceptions as to what constitutes the identity of a presentation. Both distinguish between presentations and the momentary psychological occurrences or excitations on which their presence in consciousness in the primary or perceptual state depends. But according to the first or *atomistic* view each such event calls a new presentation into being, as each impress of a seal, *e.g.*, might leave a fresh print on a revolving tablet. On this view there might be an indefinite number of presentations qualitatively alike but numerically distinct. According to the second view, on the other hand, repetition does not mean the birth of a new presentation but further growth or some analogous change in the old. We might call this, perhaps, the *functional* view: the possibility of a plurality of identical presentations seems here excluded. We have seen further that on the atomistic view recognition or assimilation cannot

¹ *Op. cit.*, p. 464.

be explained as association by contiguity ; and that Prof. Bain, who sets out from this view to explain recognition as due to an attraction of similars, ends by showing that it is not a case of association at all ; and in fact is led, spite of himself, to broach the functional conception of presentation.

Before proceeding to discuss this functional view more fully it will be well to examine how far the atomistic assumption of a plurality of qualitatively identical presentations is justifiable in itself. In our everyday experience of the external world numerical distinctness is given either by spatial or by temporal marks. Thus I range on a plate a number of digestive biscuits out of the same tin. Here I have $a_1 a_2 \dots a_n$, the subscript numbers denoting merely different positions. I eat one of these biscuits every day at lunch and again have $a_1 a_2 \dots a_n$: the numbers here denoting repetitions of qualitatively identical events, *i.e.*, merely temporal distinctness. Now what the atomistic psychologists do is simply to equate the psychical to the physical. Here as in many other cases they seem to apply the formula : The presentation of x is an x presentation : thus, the presentation of difference is a difference of presentations ; the presentation of succession is a succession of presentations. These are, I believe, fair instances. In the present case we should have: The presentation of n identicals is n identical presentations. Now, even if this were a true account of the facts in the case of a percipient who is cognisant of spatial or temporal distinctions, it by no means follows that it is true before such grounds of distinction are possible. If we assume that the knowledge of space and time presupposes these very processes of assimilation and association, it is plain we cannot look to space and time for the differentiating marks, which, on the atomistic theory, these processes involve. The genesis of a mind capable of apprehending a plurality of identicals may require rows of biscuits and repeated meals of them, and more of the like. The description of this genesis may require in the psychologist explicit knowledge of objects and events as qualitatively identical and yet numerically distinguished by differences of spatial or temporal position. But it is plain the subject in course of development cannot require at the outset what it is to acquire at the end.¹ But even where mature spatial

¹ To suppose that it can is an eighteenth century blunder, from which psychology has only partially cleared itself. It is on par with the doctrine that spoken language was invented by a convention of rational grimacers. The chief difficulties in the way have probably been the two referred to in the text : (1) the conception of knowledge as a copy, *i.e.*,

and temporal intuitions are possible, it is, of course, not true to say that the presentation of n identicals is the same as n identical presentations. A number of forms or colours are only known to be qualitatively identical by matching them all to *one* standard. To match them severally to as many distinct standards would leave us just where we were. The presentation of qualitative identity with numerical distinctness, in other words, requires a one in the many. Any attempt at symbolic representation must emphasise, not suppress, this fact. The formula should not be $a_1 + a_2 + \dots a_n$, but rather a (1, 2, 3 . . . n).

To sum up: The terms of a series such as $a_1 + a_2 + a_3$ may represent the physical events of stimulation; or they may be the psychologist's own private memoranda. But it is difficult to assign to them any meaning for the cognising subject before spatial or temporal plurality or overt comparison is possible. And since explicit identification involves of necessity a one in many it seems reasonable to suppose that a vague psychological unity or continuity is differentiated or specialised before logical generalisation is possible. The *primum cognitum* would then be not a plurality converging towards explicit unity but implicit unity diverging into definite plurality. So we come naturally to the examination of the functional view of presentations and of the process of assimilation or recognition.

The characteristic peculiarity of this process of assimilation or immediate cognition is that there are not two presentations A and a directly given as part of the fact to be explained. Two presentations have simply been assumed¹ in order to bring assimilation within the range of the more comprehensible processes called association. Apart from all hypothesis or inference we have first a new or strange experience A ; then after more or fewer repetitions, we say this experience is "cognised" or is *familiar*. If A be an act or movement, we say at first it was hard or difficult, but after repetition it is performed with *facility*. Familiarity and facility may be regarded as qualities that perceptions or actions may gradually acquire, qualities that by degrees replace the strangeness

the confusion of the psychical with the physical, and (2) the confusion of "the standpoint from which the origin of a conception is *expounded* with the standpoint at which the conception is *acquired*". In these words I happened some time ago (*Jl. of Speculative Philosophy*, 1882) to describe what is now sometimes, but not very happily, called "the psychologist's fallacy". It is by no means exclusively a psychological mistake.

¹ The reader will observe that in the passage quoted above Prof. Bain begins: "We have always taken for granted," &c.

or difficulty that accompanied those experiences at the first. We may indicate this acquired quality by γ , so that A in becoming cognised or assimilated becomes A γ . But at the outset it must remain an open question how far γ is a mark of something that A has gained, how far of something that A has lost. It might be either or both. Thus loss of interest, loss of impressiveness, is an aspect of familiarity: the diminution of effort an aspect of facility. The problem, in short, is to ascertain, if we can, the nature of this γ as an attribute or characteristic of a given presentation. With this proviso all possibilities are open. The problem may be wrongly stated, but if so, the functional view is fundamentally false. Let us pass to the facts that seem to suggest or support it.

One obvious consideration is that the most various presentations may become familiar; also that the mark of familiarity seems the same whatever be the presentation to which it may pertain. May we then suppose that the nature of γ is to be found rather in the subjective than in the objective constituents of consciousness? It is at all events certain that familiarity and facility are closely related to feeling. Unfortunately these relations—at first sight at any rate—appear discouragingly complex. Though the familiar is often pleasurable yet we have plenty of familiar pains. Again, beyond certain limits the familiar becomes uninteresting, unless positively painful: also the easy becomes the mechanical. On the other hand, the unfamiliar and the difficult have their attractions, though again only within certain limits: we are hostile towards the utterly strange and averse to difficulty pure and simple. The complexity thus indicated is due, I suspect, to the combination of two or three simple laws. But waiving this inquiry meanwhile, let us see whether the consideration of subjective activity may not further elucidate the nature of γ and possibly clear up its connexion with feeling. In fact we may be pretty sure *a priori* that it is here if anywhere that the functional view will find its justification.

It is in terms of subjective function—so to say—that we ordinarily express the broad facts of habit and practice. Use we say is second nature and practice makes perfect: the effect of custom is thus conceived as a change on the subjective side, not as an association of a plurality of identical presentations. Indeed in the case of dexterities acquired by practice, it is obvious that there is no such series of identicals at all. From the first rude beginning—say the schoolboy's pothooks or the schoolgirl's curtesies—up to the finished performance of

the adept there is continuous approximation, awkward and bungling attempts passing gradually into the bold strokes and graceful sweep of mastery. Looking simply at the movements themselves we are impressed, not by the sameness, but by the difference, between the final adroitness and the initial clumsiness: there was little of what characterises the former to begin with and there may remain no trace of the latter in the end. Or if we take note of the effect produced on muscles and limbs by exercise we find that these also gradually change and that such changes may be indefinitely great. Whenever the blacksmith "swings his heavy sledge" there may be physically the same amount of work done. But for the smith himself the same work, now that "his arms are strong as iron bands," does not entail the same effort, is not a repetition of the same experience, as at first.¹ Facility and faculty (or function) are much the same both etymologically and actually. If the facility, efficiency or function is the psychical concomitant—whether directly or indirectly—of structural growth and development, and if the perfected structure has actually superseded the rudimentary, may we not assume the like of the perfected function? As little as the new structure is a combination of the old so little is the new function an association of the old. The less fit may be fossilised and preserved elsewhere but not embodied in the fittest that finally survives.

If we look next at cases of instinctive or innate skill these seem to point to the same conclusion. The young ring-plover, for instance, can run as soon as it emerges from the shell, that is, without practice and without repetitions. Yet it seems reasonable to assume that the newly-hatched plover has at the outset much the same sense of use and ease that a kitten only has when after many trials it has attained a like facility. Of all but the fundamental endowments of mind, whatever these may be, it is probably true that innate

¹ Any one with a turn for psychology *might* analyse the several steps of his progress in learning some feat of skill and observe the gradual elimination of the awkward and irrelevant and the gradual advance of the graceful and fitting. But these observations would not constitute the skill; and in fact they would probably hinder it. The whole situation would be comparable to that of a botanist from time to time interfering with a growing plant to see how its flowers or fruit developed. As the botanist may draw or in other ways record the several phases of such development so may the psychologist note in himself the rise and progress of some new aptitude he is in course of acquiring. Such records may quite naturally form an associated series, and this series might even be itself associated with the stage finally attained. The great thing is to take care we do not confound the two.

faculty is, in general, due to facility previously acquired by practice and transmitted by heredity. Heredity is a fact which psychology cannot explain; but it is also one which may itself affect our psychological explanations. It seems to force us to admit that by whatever means a given structure is called into existence, the psychological concomitants of that structure will be there too; and cannot be there otherwise. Were the newly-hatched plover to be put on the water, its first experience would be strange; but the newly-hatched duck so treated would begin by feeling at home. Might not the case be essentially the same if for plover and duck we substitute, say a dog who has not, and a dog who has, thoroughly learnt to swim? More generally: If in the case of instinctive ability the characteristic of facility— γ as we have called it—is not an associative series, may we not assume that even when such a series is a possible accompaniment of facility, *viz.*, when the facility is acquired by a subject sufficiently advanced, the series is still no part of the essence of γ ?

It will perhaps be urged that the special case of familiarity concerned in cognition is different from the special case of facility concerned in movement. In acquired dexterity there is a series of approximations towards perfection, but in acquired perception the object perceived is identically the same from first to last. Though neither my juvenile pothooks, nor therefore the movements that produced them, form a series of identicals, yet all my former impressions of the moon's disc can do so. Perhaps such a plea for separating facility from familiarity has never been explicitly made; but it seems fairly implied in the diverse treatment of the two by many psychologists. But if we attend—as it is plain we ought—not to the physical thing but to the individual's percept, then surely this too is an acquisition, entails activity and progress, gradually approximates towards completeness like other acquisitions. It too has its physical concomitant in differentiation of structure, and just as there are innate dexterities so there seem to be innate percepts. The young rabbit begins by being indifferent to mice and interested in carrots, the young cat by being indifferent to carrots and interested in mice, while both are alarmed at the sight of a dog. Many striking instances in point are to be found in the classic paper by the late Douglas Spalding or in the pages of Dr. Romanes.

Possibly something should here be said of that "mental chemistry" or "inseparable association" which Brown seems to have been the first to broach, and which J. S.

Mill took so seriously.¹ It might be regarded as securing for the atomistic conception of presentations the continuity that is characteristic of the functional conception. And when Dr. Bain talks of the past being recovered and "fused instantaneously and surely with the present," he has some sort of mental chemistry in mind. But whatever superficial resemblance there may be between the relation of a chemical compound or alloy to the elements composing it, and the relation of a complex presentation to its constituents, such an analogy is faulty in every essential point. A chemical association that cannot be dissociated is, I fancy, a contradiction in terms. But dissociability is the one distinguishing peculiarity of "mental chemistry". So it is, in like manner, of organic development, between which and mental development there is, on the other hand, more than analogy. Here, in certain respects, at any rate, there is minute and exact correspondence. Development implies change of form in a continuous whole: every growth *into* means an equal growth *out of*; thus one cannot find the caterpillar in the butterfly.

But, under whatever form, the argument from continuity, or, in other words, resource to the convenient hypothesis of sub-consciousness, is here out of place. Those who maintain that mediate recognition by true, *i.e.*, separable associates, presupposes immediate cognition or assimilation may be wrong; but at least they cannot be refuted in this summary fashion. One might as well try to prove that black is really white because both are continuous through grey. It may be possible to arrange a series of instances of recognition determined by accessory or collateral presentations (*Nebenvorstellungen*), in which the latter become less and less distinguishable from, and more and more simultaneous with, the chief presentation (*Hauptvorstellung*), as the number of repetitions increases. But such *eventual* fusion, inseparable association, sub-conscious recognition, or whatever it be called, would not be identical with the assimilation or simple cognition supposed to be indispensable to the conscious and separable association from which the series set out. The two processes might cease to be directly distinguishable, and a certain presumption might arise that the second had lapsed into the first. But against the supposition that the first was really one with the second there would remain the fatal objection already urged.²

¹ Cf. his edition of James Mill's *Analysis*, preface, p. viii.

² See above, page 349.

No doubt there must be some likeness between the two, since both are cases of familiarity and depend on repetition ; but in the one we have A gradually becoming A' , in the other it is contended that we have rather $a' + b' + c'$ originating some new form, let us say a' . The same fundamental laws of retentiveness and practice, the same functional conception of presentation, will apply to both. The difference on this view is that the process of assimilation precedes and prepares for the existence of memory-images or "free ideas," as they have been happily called,¹ whereas all processes of mediate recognition, involving not only retentiveness, but reproduction—to use the old terms—cannot begin till memory-images are possible. Of course all this is open to question, but then it should be questioned. Meanwhile the attempt to outflank it by stretching the conception of association till it becomes self-contradictory and postulating memory-images in sub-consciousness that have never been remembered is obviously futile.

It will bring us nearer to a satisfactory issue to inquire how association is supposed to be related to retentiveness and other primary processes. Even on a point so fundamental as this, the greatest obscurity prevails owing again to the vagueness with which the leading terms, presentation and association, are used. Dr. Bain, for example, identifies retentiveness and association by contiguity. In the article already quoted he writes: "The law of Contiguity, if defined as a power of associating into one mental group *two* or more discrete members, is not wide enough. The intellectual property that it expresses is equally operative in the formation and the persistence of the ideas themselves. In all probability the simplest idea is already a complication ; and its parts are bound into a mental unity or whole by the force underlying contiguous adhesion. . . . The process of converting the Sensation, or primary Impression, into the Idea, supposes the very same psychical force as that expressed by the law of Contiguity."² It is difficult to make this statement clear. The last sentence, of course, is true enough ; that is to say, retentiveness is required in order that ideas may be associated, just as it is required before impressions can persist and leave "traces" or ideas behind them. But what sort of conception are we to form of a presentation that always consists of simpler presentations associated by contiguity? Surely this is atomism with a vengeance!

¹ Höfding, *Outlines*, Eng. trans., p. 126.

² On 'Association' Controversies, p. 163.

And if *two* or more discrete members are not essential to association (as distinct from retentiveness) what becomes of Dr. Bain's formula, according to which presentations "occurring together . . . tend to grow together . . . in such a way that, when any one of them is afterwards presented to the mind, the others are apt to be brought up in idea"?¹ Few psychologists, I fancy, will admit that it was "simply expository convenience" that led them to treat of the formation of the idea before entering upon the associating principles.² On the other hand, I fear it must be admitted that still fewer psychologists have been at much pains to ascertain how association is related to the formation of the idea, *i.e.*, to assimilation. Perhaps the most instructive handling of this subject is that of Höfding, including the subsequent discussion of his article by Lehmann, Wundt and others.³ It is one of Höfding's merits that he has detached the problem from the old question-begging terminology by using a new term, *Bekanntheitsqualität*—which might perhaps be rendered into English as Cognisancy—to denote what is characteristic of the immediate recognition of A as distinct from its mere presentation. This difference he attributes to repetition and exercise. It is what we have above symbolised as $A\gamma$. But Höfding himself symbolises it as " $(A + a)$ or better perhaps (a)". He speaks of A and a in this formula as elements, and even goes so far as to allow that they have become fused below the threshold of consciousness.⁴ At the same time he is careful to insist that as this "product" enters consciousness, the representative element a has no independent existence. It is, so to say, embryonic, something additional to the mere sensation, yet something less than a "free or independent idea". It is a "tied" (*gebundene*) idea. Explicit memory, association or comparison, is only possible when such ideas in the making have entered upon their career as independent members of the content of consciousness. I believe

¹ *Senses and Intellect*, bk. ii. ch. i., 2nd ed., p. 332.

² Dr. Bain lays claim to the support of Prof. Sully on this point, but hardly justly as it would appear. Cf. the latter's work on *The Human Mind*, i. pp. 186 ff. [Even Hartley is against him: cf. *Observations on Man*, 1st part, see pp. viii.-xi.]

³ Höfding, "Ueber Wiederkennen, Association u. psychische Activität," *Vierteljahrsschr. f. wissenschaftl. Philosophie*, xiii. and xiv.; Lehmann, "Kritische und experimentelle Studien u. das Wiedererkennen," *Phil. Studien*, v. and vii.; Wundt, "Bemerkungen zur Associationslehre," *Phil. Studien*, vii.

⁴ *L. c.*, xiii. p. 437.

there is considerable warrant for this way of looking at the facts, and indeed have gone even further—possibly too far—in suggesting the theoretical distinctions of presentation-continuum, memory thread, and ideational tissue. But unhappily, as regards Höffding, there is still too much of the atomistic conception of presentations, too much “mental chemistry” still, lingering in his exposition. This, I think, has led to some of the misunderstandings of which he complains.¹

And there is a yet more serious uncertainty, referred to by at least two of his critics,² which he has so far not attempted to clear up. What is the relation of the effect of habit or exercise to the “tied idea”? Thus, at the outset, Höffding says: “[Immediate] recognition, or rather the quality of cognisance [*Bekanntheitsqualität*], is then the psychological correlate of the greater ease with which a change is produced in the arrangement of the cerebral molecules concerned”. And again: “That which I express *theoretically* as the fusion of a sensation with an idea is the change which a sensation can undergo through repetition. It is the effect of exercise (*Uebung*) and nothing else.”³ The phrases “psychological correlate” and “effect of exercise” here seem to mean that *a* itself answers to the sense of familiarity or facility. But if that be so, what justification is there for the very different conceptions of “tied ideas,” “fused elements,” and so forth? In other words, are there two psychical results of repetition—facility and the growth of *a*—or is there only the latter of these? Is the ease consequent on exercise only a physiological fact, or has it a psychical concomitant distinguishable from the nascent *a*? On this point, as said, Höffding seems not clear. But there is much to be urged in favour of the view that the facility (or familiarity) of a perception is a psychical fact distinct from the gradual elaboration of the memory-image, and that repetition furthers both.

If it were true that cognition begins in purely passive affections or impressions *ab extra*, it would be useless to talk of an activity concerned in simple apprehension. But the current conception of a sensation leaves out of sight a part of the entire fact that is here of importance. A sensation is not mere content of consciousness, psychical object,

¹ That of Prof. James, *e.g.*, in his *Principles*, i. 674 f.

² Lehmann, *Phil. Studien*, vii. p. 182; Offner, *Phil. Monatshefte*, xxviii. p. 407.

³ *Op. cit.*, xiii. pp. 433, 453.

datum, or presentation; if it is actual at all, the subject must be conscious of it, it must be apprehended, it must be received. As regards this point the sharp severance between sensation and perception in our present terminology seems a mistake. The older use of perception—as when Locke, for example, says: "Perception is only when the mind receives the impression" (Essay II., ix. 2)—is so far better. This granted, and if it be allowed that the individual is not equally ready to receive all impressions, there is room for progress in facility or faculty of apprehending given particulars. It is to this, I take it, that we must refer the feeling-element of cognition already mentioned.

As regards Höffding's "tied ideas" or the gradual elaboration of "memory-images" more needs to be said. If this process and the distinctions implied in it were satisfactorily established it would be easier to define the range of association. But there is perhaps no part of psychology less carefully explored, or more crowded with pure conjecture, than that relating to the transition from impression to idea. For this our meagre terminology is partly to blame: we are like a Robinson Crusoe who should set to work to build a house and make his clothes with no better tools than a hammer and a bradawl. Thus retentiveness, recognition, reminiscence, recollection, are more or less lumped together as "memory". Ideas are described as "faint impressions" due to central excitation; and all complexity, ascertained or inferred, is put down to "association". In consequence the lower animals are often credited with ideation and memory on evidence that only warrants the attribution of perception. Yet there are facts enough in human experience that show the wide difference between perception and free ideation; but these facts too are liable to be confused so long as the same term "reproduction" is applied both to the "representative element" in perception and to the free ideas of memory or imagination. Thus tastes and smells are perhaps as well recognised as colours or sounds, but certainly have nothing like the same possibility of independent reinstatement. There is then a reasonable probability in the supposition that "ideas" have to pass through a stage in which they can only modify fresh impressions before they attain to the independence implied in reproduction by association, before, that is, they are properly entitled to be called ideas.

A psychophysical hypothesis, very generally accepted by psychologists, has unquestionably tended to arrest this inquiry

into the development of free ideas—the hypothesis, *viz.*, that the seat of ideas is the same as the seat of impressions. This doctrine is very clearly stated and enforced by Dr. Bain and is often referred to under his name¹ and accepted on his authority. As a refutation of “the old notion of a cerebral closet quite apart from the recipient apparatus,” Dr. Bain’s arguments are entirely satisfactory. But since 1855 both psychology and neurology have advanced so much that the old answer no longer suffices. A brief discussion of this hypothesis, so far as it bears on our main inquiry, together with the inquiry itself, must, however, for the present be deferred.

¹ Cf. *Senses and Intellect*, 2nd ed., pp. 343-352; *Mind and Body*, p. 89.

VI.—DISCUSSIONS.

THE ORIGINAL DATUM OF SPACE-CONSCIOUSNESS.

Under this title Mr. E. Ford, in the last *MIND*, propounds to Mr. Ward and myself an alternative which he considers fatal to our doctrines of space-perception. May I make a reply to the criticism so far as it concerns my own view?

Mr. Ford says that 'local signs' are "utterly inadequate to furnish a foundation for the perception of position". If 'to furnish a foundation' mean 'to *explain*,' I entirely agree with our critic. The word 'local sign' has perhaps come to be abused in recent literature on the space-question. Lotze's original intent with it (if I am not mistaken) was rather negative than positive. He needed a term which would denote a numerically distinctive quality in each point of our sensitive surfaces, and yet which would not connote any positive explanation of the relative positions in which the objects perceived by the points appear arranged. But one now notices a tendency to use the term local sign as if it were meant to cover some mysterious explanation. I am not sure that Mr. Ford does not take it in this way, for he assumes that Mr. Ward and I 'deduce' or 'develop' space from the local sign system. I, for one, certainly disclaim anything of the kind. By defending what I call a sensationalist theory of space-perception, I mean expressly to deny that we can logically or rationally deduce the features of the finished phenomenon. Its antecedents are physiological. Mr. Ford asks: "How much does the conception of extensity involve?" As a matter of *fact*, extensity involves all that comes out of it in the way of finished space-determinations. But as a mere *conception*, I do not see that extensity necessarily involves any exact system of points with their relations or distances, for we may empirically be conscious of spaces that are exceedingly confused and vague as to their inner content. This is especially marked in dozing and in recovery from syncope or *anæsthesia*. Neither, on the other hand, do any number of distinct feelings, susceptible of serial arrangement, such as 'local signs' are assumed to be, necessarily 'involve' extensity, for we find in every department of our sensibility feelings which, when we arrange them serially, never appear spread out before us in space. That certain organs give us sensations of extensity, and that parts of these organs contribute objects which when separately attended to appear definitely placed within the extensity, are facts which seem to me insusceptible of any logical explanation. All we can say is, that these organs act in this way, and others do not.

Take, to illustrate, the cases of the eye and the ear. When we

first hear a musical chord, it has a certain richness and volume, but no distinct parts are apprehended within it yet. By setting the attention in a certain way, however, we discern first one, and then another of the notes. There is a quality in each note which identifies, individualises and distinguishes it from the rest. Moreover, if we 'compare' the notes, we feel a relation between them, which Prof. Stumpf has well called their 'distance'. One pair have more distance between them than another, so that we can arrange them serially. In the case of the notes, however, no one would seriously pretend that the distance was a *sound*, like that of the notes themselves. Most people would call it a relation intellectually and not sensibly apprehended; and if asked *why* it is not sensibly perceived, would simply say that we have no sense-organ for such relations. Now the field of vision is both like and unlike the chord. It is something rich and voluminous, within which presently, by setting the attention, we discern first one and then another spot, and then, by comparing, define the distance between them. Only here the distance is a thing *seen*, and not a relation apprehended merely intellectually; for in the eye we have, as in the ear we have not, a sense-organ for such distances. Simultaneously with the spots, their distance is optically felt, the physiological condition of the feeling being the excited retinal tract which stretches between the retinal points on which the spots fall.

But, says Mr. Ford, if the seen distance, or line, "is a feeling, what is the relation between this feeling and the two points which it connects? Our reply of course would be: That of 'besideness,' of local contact, which we consider must be postulated as a primary datum. We do not see what answer would be open to Mr. James."

To which I can only reply that the answer 'primary datum' is as open to me as to Mr. Ford. That two seen things, when distinguished, appear 'beside' each other, and that two heard things do not, seem to me two inexplicable facts. The usual explanation that we pass from the one seen thing to the other by a muscular 'sweep,' the feeling of which is absent in the case of the heard things, is quite inadequate; for (even if the facts were strictly true, which they are not) one does not see why the end of a muscular feeling *should* appear separated in space from its beginning any more than one sees why the beginning and end of a sound should *not* so appear. Nor can the Mill's phrase of 'mental chemistry' or Wundt's of psychic 'synthesis' be held to have explanatory value. On the contrary, they but re-name the mystery. Whatever the intrinsic character of the qualities known as local signs may be, if they are susceptible of serial gradation, they must appear more or less 'distant' from each other, and some will appear next each other. But the distance will be space-distance, and the nextness will be 'besideness,' only when the whole system of qualities aroused together appears with spread-outness or extent. Serial position

then becomes sensible and palpable as *place*. Behind this 'ultimate fact' we cannot go.

When then Mr. Ford offers his final dilemma: "The local sign is either given as a relation or as a quality; if the former, the relation of position must be original and the development-theory is superfluous; if the latter, the theory fails;" I can only say that I know of no development-theory for which I am responsible, for I never tried 'to develop' either extensity or position out of local signs. The local sign is of course a quality, and one local sign by itself cannot be given as a relation. But that, when many local signs, or rather the sensitive organic points which correspond to them, are excited together, the objects tinged by the local signs appear *in* relation, and eke in relations of position, is a fact which no theory of mine ever attempted rationally to explain.

WILLIAM JAMES.

PROFESSOR JAMES ON SIMPLE RESEMBLANCE.

I feel that some reply is due to Prof. James' remarks in the last number of *MIND*, and I will begin by recalling the original issue. Professor James contended "that any theory which would base likeness on identity, and not rather identity on likeness, must fail". He argued not that there *might* be but that there *must* be simple resemblance not resting on identity.

In proof of this thesis he adduced arguments which I endeavoured to meet. These arguments, as they were stated, are withdrawn, and Prof. James now relies on a simpler form of one of them. He argues that identity not based on mere resemblance is untenable, because it leads to an infinite regress. And I will try to deal with this contention in its present shape.

The attempt is difficult for this reason, that, desiring to examine the proof adduced, I am unable to find any. The series of degrees, not degrees of anything at all, is no longer urged, and Prof. Stumpf's subtleties are no longer before us. But I can discover nothing which is to stand in the place of these. There is an assertion that identity must lead to an indefinite regress. But the ground of this assertion seems not stated explicitly.

And hence in the main I have to repeat that a view of identity exists, which, so far as I see, wrecks Prof. James' thesis, and which, it seems to me, he throughout, and from first to last, ignores.

Identity and difference on this view are inseparable aspects of one complex whole. They are not even "discernible," if this means that you can separate them in idea, so as to treat one as remaining itself when the other is excluded. And the whole is emphatically not a "synthesis," if that means that it can be mentally divided, and that its elements then still keep their characters. The "Hegelian commonplace," suggested by Prof. James (p. 210), is therefore, to me at least (whatever Hegel would have said of it), in principle erroneous. It seems to contain the root of Prof. James' own doctrine.

Let us take, for example, the different kinds of our sensations. In each kind I should say that there is something the same. Colours or smells differ among themselves, but there is a point in which, as coloured or as odorous, they are identical. But to call this or that colour a "synthesis" would in my view be mistaken. For the uncoloured differences on one side, and their colour in general on the other side, are the products of false analysis and vicious abstraction. You may of course consider and attend to either the sameness or the differences in colour; but you must not use language which implies that either aspect, if not qualified by the other, is consistent even in thought. You cannot, in short,

separate them even in idea ; you can only lay stress for the moment on one side of an integral whole. It is as it would be at a far lower degree with, for instance, the inside and the outside of a sphere. Whichever of these you consider, you have also the other along with it. And to speak of their "synthesis" as if they were Indian boxes one inside the other would be in principle vicious.

And the view which I advocate is so far from seeming to me subtle, that I am prepared to hear that it is even trivial. But let us see how it applies. With colours and smells, and other kinds of experience, we have not reached the end ; for these again are all alike and have something in common. They are all alike in being experienced or felt. Sentience, being, or experience (these are all the same to me) is a character in which everything is finally identical. And let us see if this doctrine is destroyed by Prof. James' indefinite regress.

We hear that analysis, if we pursue identity, takes us to one of two conclusions, each untenable, and that therefore simple resemblance is true. Whether simple resemblance itself is tenable seems a question not directly faced. An attempt is made to prove that thesis indirectly by setting out and refuting all other possibilities. But I hardly see how it can be assumed that we *must* possess some tenable view. And in particular I cannot find that the above view of identity is recognised at all. But, if so, the proof is obviously unsound. I am ordered either to accept the "Mind-dust theory"—a thing I venture to consider not worth the least notice—or else to affirm "the postulation of point after point, encapsulated within each other *in infinitum*, as the constitutive condition of the resemblance of any two objects" (p. 208). But these alternatives surely do not include the view which I hold. To me it seems strange that colour should be encapsulated within colours, and general sentience within sensations, and that my own life should be felt the same only because somewhere it has, or is, a box with something in it, and that otherwise my life is one because of one (?) simple immediate resemblance, resting, I suppose, on no constitutive condition whatever. But what to me is strange too is that any one, thinking so about Identity, should incline to banish it only at a certain point and not wholly and altogether.

And this idea of "encapsulation" is, so far as I see, no mere metaphor. It seems the whole argument, and it contains the entire essence of Prof. Stumpf's superfluous subtleties. The view which, if not refuted, ruins Prof. James' thesis is this, that identity is always one aspect of an integral whole, and that if you abstract it, in the sense of ideally putting it in a box by itself, you have made it inconsistent with itself or reduced it to nothing. Experience or being is the last term in my regress and is where I stop. And I am told that I am bound in reason to go back further still. And asking for a reason all I get is this. We

have, say *a*, *b*, *c*, *d*, all with one ultimate aspect *m*. And I am ordered to encapsulate *m* and then to see what happens. But I was taught what happens years ago when I learnt too imperfectly from a great master who saw into these matters perhaps as far as Profs. Stumpf and James. And I remember enough to recognise in this order to encapsulate the merest attempt to beg the whole question. And I say that I will neither take *m* as abstract being and so make it nothing, nor will I take it as a "synthesis," and so within it set up an infinite regress. I will take it rather as one aspect in vital connexion with another aspect, and, if this is absurd, I ask at least that some one will try to tell me why. For my part, since in experience identity and difference seem indissoluble and since otherwise the entire world of our knowledge seems dissipated, I will take them in this union though certainly I cannot explain it. For I have always supposed that explanation must stop somewhere. And if any one urges against me such questions as how quality makes itself and how relations are engendered, I submit respectfully that all this is the merest irrelevancy.

So far as psychology is concerned I have tried elsewhere to make my view clear. The question between Resemblance and Identity I have urged is there one of relative efficiency. I have protested and I do protest against attempting in psychology to judge of ultimate truth. If Resemblance *were* the ultimate truth I would not use it in psychology, because I am sure that there it works badly. And when I hear from Prof. James that he cares about it as a thesis, that a little surprises me. For where, I ask, in psychology is this thesis to be *used*? Prof. James, I thought, had broken with that insane mythology which Resemblance begets. I thought that the doctrine accepted from Prof. Stumpf was a thing out of connexion with his actual work. But if he cares about it then clearly I am somewhere mistaken.

Or is the thesis idle psychologically, and is it as a piece of ultimate metaphysical truth that Prof. James contends for it? I wish, if so, that point had been clear, for, if so, from the first I could have been much shorter. The question is, I presume, the fundamental problem about the One and the Many. Can these features be held apart, and again is there any way of intelligibly taking them together? What opinions I have on this matter are in print and ready to appear. But I will say at once that in the full sense of the term intelligible I do not think the union of these aspects of the world is intelligible. I think that in the end *each* (not merely one) shows inconsistency when apart, and that taken together they fail to satisfy the ultimate demands of our intellect.

But there is something else I think also. So far as the world or any part of it is to any degree intelligible, so far as there is any knowledge which to any extent goes beyond the barest feeling, this is the case solely because Identity, as I hold to it, is fact and truth. Deny this principle and the world, as we have it, is destroyed. And immediate Resemblance without identity seems to

me on the other hand sheer nonsense. As a principle of knowledge it is useless and worse than useless, and in itself it is a mere heap of staring inconsistencies. And if I am invited here to a metaphysical discussion I will make Prof. James this offer. If he will state the principle on which he objects to identity (a thing which let me remind him he has not yet even attempted to do), I also will take the same principle, whatever it is. And I will show that judged by it Prof. James' thesis as to Resemblance (No. 3 on p. 308) is indefensible. But I should add that I venture to provoke this conflict only because I feel sure that any appeal to principle would render it unnecessary. And if I am asked, Since all at the end may be unintelligible, why not at the beginning say, All is simple, and so have done with it?—I feel the force of that inquiry. But I would suggest in answer that not to trouble oneself at all might be even simpler.

If, however, we may remain on the firmer ground of psychology, I would end these remarks by stating how the case seems to stand. The contention against Identity was that at a certain point it breaks down and must give place to Resemblance without identity. So far as I have been able to understand this contention, I have tried to answer it. And the point I would urge is this. If in psychology such Resemblance is wanted, then (true or false) by all means let it be used in psychology. And if Prof. James could show me that in his own admirable work he has found it useful, that to me would be an argument of very great weight. And if by the help of it he could solve the problem of the perceived unity of a series, I would confess that these remarks have been largely mistaken. But if, in psychology at least, the principle will not work—if it merely lingers with the lingering survivals of the old Association mythology—why not banish it from psychology? Why not let it reign, if it can, in the distracted realm of metaphysics?

F. H. BRADLEY.

RECENT DEVELOPMENTS OF THE DOCTRINE OF SUB-CONSCIOUS PROCESS.

Perhaps the most striking feature in the recent development of Psychology, and more especially in that branch of it which is known as psychical research, is the tendency to break up the unity of consciousness into a plurality of distinct personalities. "I am told," said Professor Clarke Maxwell, "that I shall have soon to believe myself to be a congeries of plastidule souls"; and some at least of those who have taken up the study of mental phenomena seem now to have accepted that belief unreservedly. Upon others who cannot reconcile this view with their own immediate experience the language used—say, for example, in the *Proceedings of the Society for Psychical Research*—has an effect of bewilderment which it is difficult to shake off, and which tends, I think, to throw confusion rather than enlightenment over the whole subject. In trying to point out some of the difficulties which oppress a reader of this latter class, my object is rather to give them shape and definiteness than to attempt a solution.

The keynote to the whole theory may be found in the use of such terms as "double" or "duplex personality," "multiplex personality," "*das Doppel-Ich*," and so on. It does not appear that as yet there is any generally accepted terminology, and so far as I can gather in the absence of definitions the meaning of "personality" is apt to vary with the nature of the phenomena in which the writer happens at the time to be interested.

As generally used it appears to be identical with a "chain of memory"; and again it is implied, if not assumed, that a "primary," "secondary," or "subjacent" consciousness is equivalent to a distinct and independent personality. Now it is by no means obvious that consciousness, especially when subjacent, involves a chain of memory, and it is difficult to proceed any further in our study until some more definite meaning has been attached to the word.

If, however, we determine to ignore this difficulty for the present, we seem to find three different forms of the theory, nowhere distinctly differentiated, but developing themselves more or less gradually. In the first place, there is the form which results from the assumption of what we may call different "layers" of consciousness. Here the personalities exist contemporaneously, and we may again distinguish them according as they are known only as the supposititious accompaniments of physical events or manifest themselves in genuinely psychical phenomena. The former personalities, under the title of unconscious mental processes, have gone far towards establishing their claim to be regarded as necessary and scientific hypotheses.

The third form of the theory appears where we have *successively* independent trains of memory, where the break between one personality and another might be represented as a break in

a straight line, rather than as a distinction between different planes. If we examine this form first we are at once confronted with difficulties.

In the first place, if the different chains of memory are to constitute different personalities it must, I suppose, be assumed that they are wholly different; that the break is complete. But such a break as this would appear to be not only not forthcoming, but from the nature of it inconceivable and—if we may use the term—"unknowable". Subjectively it obviously could not be known, since the recognition of difference implies a unity of consciousness, including and transcending the difference. A *subjective* break in consciousness is a contradiction in terms. On the other hand, to suppose that such a break could be known by the experimenting observer—or at least that it *has* been known in any of the instances cited—seems to point to a defective psychological analysis. To make this evident it is necessary to examine briefly the main "elements" in consciousness at any time. Roughly speaking, and for our present purpose, we may distinguish three factors which are never separated. There is what is known as the "organic sensation" or *cœnæsthesis*, which is largely coloured with "feeling" and so exercises a great influence on the play of our ideas; there is in especial prominence all that group of presentations—sensations and ideas—which constitute the present as distinct from the past and future; and, finally, there is "complicated" with these and endowing them with all that they possess of meaning and reality, an immense mass of sub-conscious but most important memories. Using the term sub-conscious in the sense of "undiscriminated parts of a discriminated whole," it would hardly be too much to say that these sub-conscious memories form the larger, if not the chief part, of consciousness at any moment; and so far as evidence goes to show this section—or rather aspect—of consciousness remains to a large extent untouched throughout the phenomena of hypnotism and so-called duplex personality. It is the memory of association only which breaks down; that of complication survives. Objects continue to be recognised as such, and even to be known by their names; and the nature of space and distance has not to be re-learned when the second "personality" comes into being. Presumably this is because in this sort of connexion memory has become to a large extent involuntary, *i.e.*, independent of feeling, whilst the play of ideas through ordinary "associations" is largely determined by pleasure and pain. Hence the intimate connexion between the fully conscious memory train, and the sub-conscious "organic sensation" which enables the experimenter by influencing the latter to give a different direction to the flow of the former. These three elements are all involved in the true psychological personality, and so far as identity of personality depends upon connexion with the past (we avoid here any reference to the logical and metaphysical *Ego*, in face of which a difference

of personalities becomes an absurdity), it is that part of the sub-conscious undiscriminated element which is neither accompanied nor influenced by feeling to any appreciable extent which constitutes the most important factor.

It may be urged that a difference in personality does not involve any such complete break as I have here assumed; that identity is sufficiently destroyed if the fully conscious memory train is disconnected to such an extent that the Subject in one state *cannot* recall the train peculiar to the other state; so that to all intents and purposes he leads two lives. Here again we are, I think, misled by an unpsychological attitude. In the first place for the psychological subject "*cannot*" and "*does not*" do not differ in meaning, and this because of the essential unity of consciousness which will not permit that more than one train of thought can at any moment be in *full* consciousness. Hence the proper expression would seem to be not that the Subject cannot pass from one series of ideas to another, but that the one series does not naturally lead to the other. But this is no more than can be said of the most ordinary undivided person, in his most ordinary states of mind. Whenever attention is concentrated on any one chain of memory there are many others excluded for the time being, and in an excitable nature nervous emotion may exclude—or "*inhibit*"—any chain of memory, properly so called. Every one but an infant or an idiot has many such chains, from which he is completely shut out at certain times. There is the chain of memory constituting the multiplication table, or a piece of poetry; if I were to attempt to recite these in public they would be as entirely blocked out or flooded by a wave of excitement as if I had been hypnotised; but it could not be said, except in a metaphorical sense, that I was another personality—I mean, that another personality would have taken possession of my (or its) body. Plentiful illustrations of the phenomenon may be found in the annals of the Salvation Army, and the process of giving a new direction to a man's thoughts and therefore his inclinations bids fair to become an important factor in religious and moral education, but the interest of the work would vanish—from a moral point of view—if the original and presumably bad personality were not "*regenerated*" but merely superseded.

Is there, moreover, anything to be gained by this arbitrary division of Selves? are we not tempted by it to exaggerate what are no doubt very striking deviations from the ordinary course of mental development, and to close our eyes to the fundamental unity underlying such deviations—perhaps all the more easily because it is so fundamental. And, further, do not the facts of hypnotic suggestion themselves tend to show how close the connexion really is between the groups of ideas which have been thus elevated into "*personalities*"?

Passing now to those forms of the theory in which the personalities appear as contemporaneous the confusion appears to be due

not so much to wrongness or incompleteness of method, as to a perverted use of language. If we once allow ourselves to apply the terms memory and mental to facts (?) which are not remembered and not known we cannot refuse to go further and allow that "every cell in our body may have a separate memory, and therefore in a sense a personality of its own". Put into physical terms this may be true enough; I suppose that every physical—or physiological—impression leaves its mark, and perhaps a tendency to its own reproduction, and if one cell receives an impression which is not shared in by its neighbouring cells it is so far differentiated from them; but does this constitute a personality? It is the so-called automatic actions which yield the ground for this form of the theory; if the body carries out a series of systematic actions while the mind is occupied with thoughts having no reference to that series it is assumed that there must be a secondary consciousness to which the series is present and by which it is controlled. It is assumed, that is, that every physical change in the body must have its psychical counterpart somewhere. If this be allowed there seems no reason why we should not carry the assumption further and assume a psychical counterpart (and consequent personalities) to the action of the radiometer in the sunshine, and the growing seed. But is it not possible—and if possible preferable in the present stage of psychology—to avoid such far-reaching hypothesis by giving a purely physical interpretation to the phenomena of automatic action? A physical or chemical stimulus on the eye produces a physical reaction in the finger for which repeated impressions have prepared the way, and we have automatic piano-playing.

It is different with the hypothesis of "unconscious mental processes". These are assumed, not as the concomitants of a physical series, but as the antecedents of true psychical facts; and the reason for assuming them lies in the prior assumption that otherwise those facts would be without (psychical) antecedents, would, that is, be effects without causes. I venture to call this an assumption because I do not think it is yet clear that a sufficient psychological analysis might not in every instance find an antecedent in the consciousness proper—that is, in the "primary" stream of consciousness as maintained by its background of sub-conscious memories.

What is meant by "unconscious mental processes"? It will be allowed, I think, that the process as such, the act of passing from one idea to another, is rarely, if ever, a matter for consciousness. The meaning seems to be that there is an interaction between ideas which are not present to any consciousness (but which might conceivably be so were not attention preoccupied), and that this interaction both starts from and results in an idea which is present to consciousness, and which is moreover disconnected with, irrelevant to, the contents which it finds in con-

sciousness on its appearance. I think a fair example of the kind of instance in which this explanation is used (and one which is often cited) is what happens when an idea is sought for in vain, and comes later unsought, and to all appearance unaccountably. Here the explanatory hypothesis involves not only the unconscious series connecting the two conscious points, it involves also a purposive direction of the series towards the desired object, a tentative process of rejecting all members of the series until the right one occurs, and reserving that one for elevation into consciousness. This is a large assumption to make except under strong pressure, and I should like to analyse such an instance more closely, in the hope of finding some more acceptable explanation.

Suppose what often happens, that I am looking for a word which persistently evades me; there is my sentence before me, incomplete, leading up to a word which will not present itself. "The sequences of logic are necessary, those of ordinary thought merely . . ." merely what? Accidental?—no, that does not fit, the word I want begins with "C". Coincidental?—no, that is at once rejected as nonsense. Contingent?—no, that seems to fall into place, but there is an absence of meaning about it which makes me suspect it of being an impostor. I give it up, and leave a blank. An hour afterwards I am tidying my book-shelf and thinking of domestic matters as I put Glen's *Poor Law Orders* in its place: Casual! that is the word I want. Am I to suppose an unconscious mental process, a second self, or dæmonic secretary at work underground and telephoning the word up just when he happens to find it, quite irrespective of my present needs and occupation, or even a purely mechanical interaction of ideas which happens to come to an end just here? Not at all; the *Poor Law* covers a very large group of ideas in my mind, amongst which the casual ward is constantly coming to the fore. What has taken place is something like this: I have been trying to use a word in an unfamiliar connexion, it happens that in that connexion there are several other words expressing nearly the same meaning and more commonly used; they have blocked the way, caught the "search light" and reflected it back before it reached its destination. But they have also been rejected and the sentence remains unfinished. Now there is nothing which lingers in memory so long as an unfinished sentence, or an unanswered question; and naturally. For ten minutes or more I have been thinking of it and repeating it and puzzling over it; the thought is there all but a minute portion, that portion being the difference in meaning between accidental and casual; attention has been working round that meaning, lighting upon now this fraction of it, now that; it only needs the word for the whole to flash out with peculiar brilliancy in proportion to the amount of labour already expended. Suddenly a more familiar connexion is started, and it is there. Now note

another significant fact. I am at first puzzled by the importance the word assumes for me; why has it thrown itself at me like this? did I want it for anything? My seeking attitude is resumed, I remember my previous search, and the word falls into its proper place in the sentence. But the process is the reverse of that which would have taken place if the word had been the result of my original search (or of an "unconscious mental process"); then I was looking for an *x* to supply a want, now I am puzzled by an item of thought disproportionate (*not* irrelevant) to its context. We have seen the source of the peculiar emphasis attaching to the idea; it is due to the fact of attention having been concentrated so recently upon almost coincident ideas; *abx* was the idea wanted, and I have been dwelling upon *abc*, *bcd* and *axc*. Briefly, my recent efforts have lent peculiar force to the greater part of the idea, and when chance brings it within the focus of attention, this peculiar brilliancy re-attracts attention, and curiosity is set to work until it falls into place.

May not some such accidental association account for all apparent instances of unconscious mental processes? We cannot always trace the connexion, the association (the very interest attaching to our unexpected success in the instance above noted tends to obliterate the circumstances which gave rise to it and were in themselves almost without interest); but still less can we assume that it is not there, that an idea has found its way into a series which has in no way led up to it. *That* would be the true breach of continuity, which no hypothesis of unconscious mental processes could bridge over.

To sum up: to the student who has not accustomed himself to the idea, the breaking up of the Self into independent Egos—whether these be contemporaneous or successive—seems on the one hand to contradict the facts of psychical experience, on the other hand to be not yet essential even as a working hypothesis. Would it not be possible to place the whole subject in a clearer light by adopting some common standard of personality and by respecting the prejudice in favour of unity of consciousness until its contradiction becomes inevitable?

HELEN DENDY.

VII.—CRITICAL NOTICES.

The Evolution of Religion. The Gifford Lectures delivered before the University of St. Andrews in sessions 1890-91 and 1891-92, by EDWARD CAIRD, LL.D., D.C.L., Professor of Moral Philosophy in the University of Glasgow. Glasgow: James Maclehose and Sons, 1893. 2 Vols. Pp. xv., 400 and 334.

Every one knew that anything which Professor Caird wrote on the philosophy of religion must be interesting and important to the highest degree. But this book will probably surpass most expectations. For it goes, as it seems to us, very far towards supplying the want for which idealistic philosophy has been longing, and longing vainly, to find some solace. Philosophy always feels that its work is incomplete, so long as it does not show itself in practice, as it is potentially, capable of organising and vivifying human life. More particularly must idealistic philosophers long for such an activity, believing, as they must do, that the truth is desirable, not only as true, but as good, while they see around them so much mental distress caused by the unwilling acceptance of scepticism or agnosticism, which, as they cannot but hold, is based upon a mere delusion.

But so far there has been a great deficiency—almost indeed a total absence—of books which should give to persons interested in the results of metaphysics, but unable to devote their whole lives to its study, some account of the conclusions arrived at by the Critical and Dialectic philosophies, and some reason to hope that those conclusions might have probability on their side.

These lectures are admirably fitted to supply such a place. They do not, indeed, profess to be a demonstration, but rather a history. But Professor Caird traces the connexions by which one form of religion leads on to another with such force and precision, that one sees revealed in the temporal succession of creed to creed the logical justification of the system in which the process culminates. And that the primary object of the book should be to consider the subject rather under the aspect of a religion than of a philosophy only renders it fitter as a popular introduction to the subject, both as bringing the questions forward in a more concrete and popular manner, and as making clear in what the practical importance of philosophy consists.

Professor Caird starts with a provisional definition of religion—that it is the expression of a man's "ultimate attitude towards the universe"—which at once makes it clear that he does not share in the disposition to regard intellectual convictions as indifferent to religion. From this he proceeds to the still more difficult task

of finding a provisional working definition of God. He defines God as "an absolute principle of unity which binds in one 'all thinking things, all objects of all thought,' which is at once the source of being to all things that are, and of knowing to all things that know". It is the idea which binds together in one the two other great ideas of our nature, those of subject and object. The thesis that the validity of the ideas of subject and object involve the validity of the idea of God is worked out with great force and clearness, and at the end of the nineteenth century Professor Caird quietly informs us that every rational being, as such, is a religious being. His opponents will probably prefer to ridicule his audacity rather than to attempt to meet his reasoning.

Of course such a wide definition of God must include many most imperfect conceptions. It may be logically implicit in any idea which is taken as the absolute unity of the universe that in it both subject and object should find their completest realisation. But often very little of this is explicit. The object is conceived as a merely mechanical system, ignoring and crushing all claims of the subject to be treated not merely as a part, but as a co-ordinate whole, an end in itself, and the subject's most fundamental being is conceived, not as a harmony with objective truth, but as a wild and hopeless protest against it. In this case we get, if the emphasis is laid on the object, a system of materialism, if the emphasis is laid on the subject, a system of pessimism. Is such a unity as this to be called God? Or, passing to the other extreme, what are we to say of those who, while they believe the universe to be essentially spiritual, and personality the supreme form of spirit, yet conceive the Divine rather as a unity of persons than as a personal unity, rather as a *civitas Dei* than a *Deus*?

Professor Caird's definition, it may be objected, reduces belief in God to a truism. If all recognition of *any* unity in the universe is belief in God, then the only atheists are to be found—to adapt Hegel's phrase as to the only true physicists—"among the animals, since they alone do not think" (*Encyclopædia*, Section 98, lecture note). And the differences between those who affirm and those who deny that God is essentially personal, and still more the difference between those who affirm and those who deny that God is essentially spiritual, are so vast that to declare that all alike *do* believe in God is apt to seem like a futile crying of peace when there is really war. Yet on the whole we think the balance is in favour of the phraseology of these lectures. For it indicates with greater clearness how the higher conception of God must be justified, if it is to be justified at all. We must not form a notion of what God ought to be from some external source, and then, by arguments having no inherent connexion with the nature of the idea, endeavour to find a place for such a God in the universe. We must rather start with the facts which are beyond denial or doubt, with the bare fact of the unity. We must see

into what this can be developed, by making explicit what is implicit, and when we have thus, to the best of our ability, ascertained the truth, it will be time to ask whether the conception, thus reached, satisfies our practical and emotional demands. Our guide must be, not Apologetics, but Dialectic.

Professor Caird then proceeds to make his definition clearer by criticising, from the standpoint thus gained, the view of Professor Max Müller that the principle of religion lies in a consciousness of the infinite as the something beyond, and the correlative view of Mr. Herbert Spencer that it lies in the consciousness of the infinite as the unknowable presupposition of the finite. As becomes a Hegelian writer on the history of philosophy he is at least as anxious to point out the truth inherent in both these views as he is to demonstrate their incompleteness. We cannot but think, however, that he carries geniality rather too far when he finds (vol. i. p. 104) in Mr. Spencer a more logical Spinoza, in spite of the delicate irony of the praise. No doubt Mr. Spencer and Spinoza commit the same fundamental mistake, they "reach the infinite simply by wiping out the lines of divisions between finite things and beings". But even apart from the "sublime inconsequence," as Professor Caird happily calls it, of the *amor intellectualis Dei*, Spinoza works out his mistake upon quite other lines from Mr. Spencer's. Nothing is further from Spinoza at any time than the one assertion which is fundamental for Mr. Spencer—that we cannot know the Absolute. He conceives it as known by us as the positive substance in all the modes, though as contributing nothing to the determination of the modes in one direction rather than another. Mr. Spencer, on the other hand, takes it to be behind the phenomena, and unknowable in consequence. Or, in other words, the initial misconception of the infinite, issues in one case in a supposition that we can know the undetermined, in the other in the assertion of various propositions about the unknowable.

Of course a parallel, and an important one, can be drawn between Spinoza and Mr. Spencer on the lines indicated. We only mean that, in a book which is sure to be widely read by persons without any knowledge of the history of philosophy, such a broad statement may produce the belief that, but for his inconsistent mysticism, Spinoza's general attitude resembles Mr. Spencer's.

Professor Caird, having provided himself with tools by means of a careful and lucid explanation, in the first lecture, of the ideas of organic unity and of evolution, starts on his account of the dialectic of religious thought. As might be expected, he puts it into the form of an Hegelian triad. The first stage is that in which the consciousness of God is reduced to the level of the consciousness of an object. From this type—that of objective religions—we pass to the second stage, the subjective religions, in which the consciousness of God is reduced to the form of self-

consciousness. And finally, in Christianity, God is known explicitly as at once the presupposition and the end of both subject and object. This is a true Hegelian transition, but it is worth noting that it cannot be reduced to that type with which the general reader is most familiar—that which appears in the categories of the first Doctrine. For in that thesis and antithesis are on a level, and the synthesis is reached from both of them equally. Here, however, the passage from objective to subjective religion is expressly declared (i. 352) to be an advance. And again the transition to Christianity is regarded as largely reached by a dialectic process inherent in Judaism, a subjective religion. Judaism indeed, it is said (ii. 253), could not have produced Christianity if it had not been touched by Persian and Greek ideas, but the historical connexion with Judaism is regarded as the vital thread in the transition, and this involves the view that the antithesis itself has begun a reconciliation, by taking into itself something of the thesis. The transition is such a one as may be found in Hegel's "categories of Essence".

Our space does not allow us even to summarise the author's excellent account of the objective religions. We can only find room for his suggestive remark that savage animism was due quite as much to failing to see that human nature was more than dead matter, as it was due to actual predication of human attributes of the outside world, or, as he expresses it (i. 264), earlier religions may have personified natural powers, but the Greeks were the first to humanise them.

The transition from the objective to the subjective standpoint is illustrated by the transformation of the Vedic religion which shows itself in the Upanishads. The search for a unity, in which religion consists, cannot be satisfied until the universe is conceived as swayed by a single principle, and "he who looks away from the universal to the particular, from sense to thought, must in the long run turn his eyes back from all objects to the self, as the one principle to which they are all equally related" (i. 354).

Under the head of subjective religions are treated Buddhism, Stoicism, and Judaism. Professor Caird points out how a merely subjective religion must lead, as in fact it did, to continually increasing pessimism. He lays stress on the gradual growth of the notion of evil in explicit opposition to good as exemplified by the conception of Satan in the book of Job as God's servant, while in the time of the Apocryphal books he had become the head of a kingdom of evil. In the same direction is the change of the statement in Samuel, that Jehovah moved David to number the people, to the statement in Chronicles that it was done at the instigation of Satan.

The transition from subjective to absolute religion is a little more obscure. But when we remember that the solution proposed by Christ, although, according to Professor Caird, it rests for its value on metaphysical principles implicit in it, yet never explicitly

asserted those principles as such, still less made any attempt to prove them, we can see that pessimism in itself completed the conception of a higher unity, though it could not demonstrate its validity. The contrast between the righteousness which the awakened spirit demanded in the universe and the unrighteousness which it found there—a contrast which had now grown too deep to be satisfied by the temporal reign of a human Messiah—naturally led to the idea of a unity in which the truth and the good should be combined—not in a future which would leave the opposition of the two sides as real for thought as before, but in the eternal unity which must be present because it is timeless. And since the idea of evil had become too prominent to be ignored or smoothed over, the only escape was to face the problem, to admit on the one hand the reality of evil, and yet to treat it as a mere transitory moment in the triumph of the good.

This, as Professor Caird tells us, is what Jesus did. And this is the central point of His teaching and His religion. "It is," he says (ii. 111), "this certainty of ultimate triumph, this combination of the despair of pessimism with an optimism that over-reaches and overpowers it, nay, even that absorbs it as an element into itself, which constitutes the unique character of the religion of Jesus."

The interesting thing about this is that the importance of Christianity is definitely made, if we understand the author rightly, to depend on the enunciation of a metaphysical truth. Of course the founder of Christianity is not viewed as having elaborated a metaphysical system. The doctrine was quite as much implicit in His actions as explicit in His teaching, and even when it was actually stated, it was arrived at, not by metaphysical reasoning, but by some delicacy of spiritual intuition. But the central fact of Christianity is the affirmation of this doctrine as to the true nature of the eternal reality which manifests itself in experience.

It seems to be commonly supposed at present that there are only two ways of looking at the position of Christ towards the world. We may on the one hand consider it as supernatural, with the orthodoxy of the past. We may, as Professor Caird says of St. Paul (ii. 209), fail to distinguish revelation and realisation, and hold, not only that Jesus preached a reconciliation which was before unknown, but that He produced a reconciliation which was before non-existent. If we do not do this, the only other alternative left us is supposed to be the view that the secret of Christianity lies merely on the surface of experience, and involves no interpretation of the facts deeper *in genere* than is found in ordinary life. It is said to consist in the unique beauty of the actual life of Jesus, or the unique purity of the details of His moral teaching.

Professor Caird, however, who knows that there is something else in knowledge besides cutting loose from experience or accept-

ing it at its own valuation, adopts neither of these theories. He says in the first place that St. Paul's grasp of the truth is marred by his regarding Christ's life in the flesh as an episode between two lives of glory, and declares that the essential basis of Christianity is lost whenever simple humanity (by which we presume that humanity *per se* must be meant) is divorced from the divine. And similar expressions might be quoted, all of which tend to regard the incarnation of God in Christ as nothing but an explicit example of what exists implicitly in all reality. On the other hand, it is neither as a teacher of morality nor as an example of moral life that he holds Christ to be all-important. Not that He held that the good was binding on us, not that He acted up to His belief, but that He held that the good was the true, that He was "the greatest optimist that the world has ever seen" (ii. 109), in this lies the significance which we seek.

We cannot but think, however, that in doing justice to Christ, Professor Caird has done rather less than justice to Hegel. He says (ii. 109): "Even Hegel, in spite of his constant insistence on the negative element in existence, and on 'the earnestness, the pain, the labour and the patience' involved in that element, does not entirely escape the accusation of 'healing the hurt' of man too 'slightly,' of explaining away the darker aspects of life, and of confusing the opposites whose antagonism he seeks to reconcile. It is," he goes on, "a significant fact that no one has ever brought such an accusation against the greatest optimist the world has ever seen." This is, no doubt, perfectly true. But it must be remembered that Jesus made no attempt to demonstrate His optimism. He merely asserted it. Now it is comparatively easy to keep hold both of the reality and the unreality of evil, so long as we merely assert them side by side. And paradox is doubtless the beginning of wisdom. But it is not the end also. "Contradiction," to quote Hegel (*Encyclopædia*, Section 119, lecture note), "is not the end of the matter, but cancels itself." And although the Christian Church supplied the theory which its founder left out, it did so only, as Professor Caird has remarked, by degrading a universal and eternal truth into a particular and historical fact, as a result of which evil was conceived as overcome, not by its own inherent weakness, but by a power outside itself. And if the reconciliation is to be conceived as merely external, the reality of the antithesis is in no danger of disappearing. But if either Christ or the Church had tried to do both things together—to assert the immanent and inherent superiority of the good, and to demonstrate the transition in detail—they might have erred at least as badly as Hegel in the direction of a shallow optimism.

The lectures point out with great clearness the respective teaching of the historical Christ revealed in the Synoptic Gospels, of St. Paul, and of the Fourth Gospel and the first Epistle of St.

John. In the two latter, whether really by the same author or not, Professor Caird finds the same spirit. In the Synoptic Gospels Christ is presented merely as a particular person, whose life is one among many, and affords no explicit universal principle. In St. Paul's writings the significance of Christ becomes universal in its importance, but at the cost of becoming an isolated event, whose connexion with the destinies of mankind is comparatively external and mechanical. In St. John the two views are reconciled and the importance of Christ is seen to be that in His particular life was revealed the universal which is implicit in all particular lives, even the basest and the meanest—that in Him was made manifest the secret which is in all of us. His uniqueness is not, as both supernaturalism and positivism for different reasons suppose, that He was unlike other men, but only that in Him, for the first time, the common nature of all men became self-conscious. How far Professor Caird is right in supposing that there and then, in that particular person, no sooner and no later, the revelation came to mankind, is a question too large to discuss now. But no one can deny that his view is in the highest degree inspiring and suggestive.

We cannot but think that in his attempt, brilliantly successful as it is in the main, to ally Christianity with idealistic philosophy, Professor Caird goes rather too far in his assertion that "Die to live" is the central principle of Hegel's philosophy. The process into the antithesis, if sometimes looked on as a correction of the thesis, is sometimes looked on as its manifestation. If the two terms are sometimes related as contrary to contrary they are sometimes related as universal to particular. And, as the latter relation is characteristic of the later stages of the dialectic, it may perhaps be regarded as more essential. If the advance can be looked on as a purifying penance, it can also be looked on as a triumph, and the anticipation of experience, within certain limits, which *a priori* reasoning allows, disposes the philosopher to regard it at least as much in the latter as in the former aspect. And the attempt, on this basis, to justify the doctrine of salvation by faith (ii. 206), seems to us very strained.

We have left ourselves only room to quote two pregnant sayings. "We cannot hate the highest till we know it. On the other hand, *when* we know it we cannot altogether hate it" (ii. 208). "What is called mysticism . . . is the form under which feeling discounts the future gains of thought" (ii. 291).

It is in the same spirit of superb confidence that Professor Caird, at a time when shallower thinkers are trying to preserve the name of religion by flinging away all its intelligible content, tells us that in "the present age" the development of philosophy "has for the first time furnished us with something like a rational proof of a creed which previously rested almost entirely upon the intuition of faith" (ii. 321). The assertion of the gradually increasing certainty of the dogmatic basis of religion will probably

be deemed by "scientific" thinkers too absurd to answer. And their prudence, at any rate, will be deserving of commendation.

With Christianity the lectures cease, which is perhaps a pity. The reader would have liked to know how such a strange episode as Islam is to be regarded.

We believe that it would be difficult to overestimate the importance of this book. It cannot fail to be of the highest value to specialists. But it may well be destined to work more honourable, because more needed. It may serve, as no English book has yet served, to mediate between philosophy and life.

J. ELLIS M'TAGGART.

Die Grundbegriffe der Gegenwart. Historisch und kritisch entwickelt von RUDOLF EUCKEN, o. ö. Professor an der Universität Jena. Zweite, völlig umgearbeitete Auflage. Leipzig: Verlag von Veit & Comp., 1893. Pp. vi., 317.

This is to all intents and purposes a new book, for the first edition (published in 1878, and probably little known in this country) "has been thoroughly recast, and while the drift of thought is the same there is little left unaltered in matter or form". It is a concentrated *critique* of the ruling ideas and main practical tendencies of the time, carried out with strict impartiality but with no suppression of personal conviction, and encumbered by only such "learned ballast" as is conducive to the reader's easy progress in attaining the proper point of view. The author's endeavour, in fact, is not to treat exhaustively any of the topics with which he deals, but only to develop principles and theories in sufficient detail to enable a judgment of their value to be fairly formed. The author evidently believes that the profoundest need of the time is not minuter knowledge in special departments, but a clearer comprehension of what the first principles of knowledge really are, and a firmer grasp of practical postulates. Departmental science is a good thing, and historical erudition is a good thing, but each is vain and even frivolous if we have no hold on primary realities, and are so unsure of our spiritual foundations that in the apostle's language we are "tossed to and fro, and carried about with every wind of doctrine".

The critique of current beliefs takes the form of an examination of various ever-recurring terms, popular or academic. One group of these, first dealt with, are of the widest and most general import—as Subjective and Objective, Experience, *A priori* and *a posteriori*, Development, Monism and Dualism, Law. An examination of terms having closer relation to human life follows—as Individuality, Society and Socialism, Utilitarianism or the Problem of Happiness, Idealism, Realism and Naturalism, Free-will, Personality and Character. Lastly there is a dis-

cussion of the Religious Problem, and an inquiry into the significance of the contrast Immanency and Transcendency. It will be seen that these topics pretty well cover the whole field of current belief and action. The consideration of them is by no means of equal breadth, but even where only a few pages are devoted to a topic, the handling can never be characterised as hasty or superficial.

To understand and estimate one's age, says our author in his very suggestive introduction, is to understand and take the measure of its dominant conceptions. The age reveals itself in the terms always on men's lips, its novel coinage and reminting of old tokens, sometimes also in its silence. The words and phrases are not as a rule *mere* instruments and media of exchange. They condense hypotheses, theories, fixed beliefs. They are more than that, they are indications of emotional preference rising often to considerable intensity. The world approves and condemns by its use or disuse. "For the age believes in itself, only in itself, and cannot endure what contradicts it." And this for the sufficient reason, as our author puts it, that its own special work requires that the ideas reflecting its struggles and experience should displace the legacy of alien epochs. But the relation of current ideas to the past is not to be underestimated. We still look in great part through the eyes of remote periods, and the history of changing thought is often the only key to the faith and hope of the present.

The first terms considered are the fundamental couple—Subjective and Objective. After showing how the import of these terms has changed in course of time, and how the mutations have been motivated, Professor Eucken investigates the meaning of the contrast as now commonly understood, and seeks to push the result practically home. The conclusion reached is that while the problem indicated by the correlated words has always been felt as real and radical, the vocabulary of philosophy offers no more striking instance of inadequacy and ambiguity. That there can be no Truth without the distinction is certain, yet every movement of speculation is an endeavour to break down its rigidity. Justifiable dissatisfaction with older definition has been followed up by exaggeration of important aspects, and over-confidence in the attainment of a final solution has been succeeded by a needless humility or despair. The author notes certain present tendencies which he regards as misleading. The recoil from an excessive Rationalism is responsible for a disposition to appeal to Feeling as the final reality. This however is equivalent to denuding Truth of the attribute of disinterestedness which is peculiarly characteristic of it. Not what is pleasing to us, or what we wish to believe is *true*, but what is so far detachable from the series of our private experiences that it may be an object of universal apprehension. This implies that no historical science, psychological or sociological, can afford the basis of Philosophy. Universality

and Necessity, the inalienable marks of Objectivity, are apprehensible by Reason alone. Empirical Psychology must be supplemented by Noology. This however is not to be understood as if the Absolute Idea were to be grasped by an intellectual effort. By no purely intellectual process is truth attainable. In the practical realisation of Humanity's ideals the truth of things breaks through, the ideals themselves which point the way being only so far "subjective" as they are relative to a given spiritual nature. They are not created by human "needs," nor in any sense pathological. The author's last words are "The growing life of the spirit is radically distinct from any translation of reality into mere feeling. It produces by its own activity a new reality, and thereby strives to change the existing situation. Only at the height of such activity has man the full assurance of truth. Progress towards it however is dependent on historical conditions and never attainable through pure conception. An indispensable pre-condition of all movement towards truth is the clear distinction between spiritual work and immediate psychical life."

If in the section on "The Subjective and the Objective" the dangers of an exaggerated subjectivity are chiefly pointed out, in the chapter on "Experience" the opposite tendency to submerge the subjective factor is effectively dealt with. It is not difficult for the author to show that with every attempt to detach the actual world from the perceiving mind the object of knowledge shrinks in content and significance. Nor is the world of modern science more intelligible than that of naïve perception. A "system of Forces, Laws, Relations" is a system of ideal conceptions, conceptions, however, as the professor takes care to remark, that are "indissolubly tied to sensuous actuality". Reality is not exhausted however by the system of Experience. Besides Facts there are Postulates, in a word ideal quantities, which constitute and give a value to experience. This leads the author to insist on the necessity for a *prima philosophia*, a genuine Metaphysic. At the close of the section he laments the unfortunate ambiguity of the term which forms its theme. Its negative indeed it would be hard to find, for only a notional construction of the world, which would be destitute of content, could be styled non-experiential. "To find a place for knowledge in the entirety of life, and to understand this life as a ceaseless endeavouring, this is to admit experience in its widest extent."

The idea of Development rules the present age as no other, and with its general acceptance is consummated the transition from the old to the new order in the system of thought. The immutability and fixedness of Truth, the catastrophic and miraculous in Nature and History, self-evident or reasonable to the ancient mind, have been displaced by a relativism which affirms that Truth must ever be in process of formation, and by a doctrine of Continuity which declares that a single unmediated event would throw the world into chaos. The writer of the present work is

not blind to the immense gain in coherence and inspiring power in a view which connects by close-fitting links the progressive content of the vast time-frame, and substitutes for any external shaping and adapting of things and beings a self-moulding process organically initiated ; but still thinks there was a verity in the disparaged theories of abiding truth and reality, which no version of Evolutionism can absorb. "Platonism contains truths as undeniable as Darwinism ; a synthesis is called for, which shall at the same time eliminate the error in both and bridge the gulf between them." The author seeks to substantiate this by proceeding to show that the idea of Evolution itself requires the conception of Permanence in the midst of Change. Natural Science itself is impossible without certain timeless forces and laws. Equally in History. "History is no mere picture-book and collection of curiosities." History proper is *comprehended* history, and this means much more than tracing a stream of events from date to date. The bringing of the past into relation with the present presupposes an ability to stand outside both past and present, *i.e.*, a non-temporal spiritual existence. This spiritual existence realises itself in time, under varying outward circumstances, incited to reflexion by special stimuli ; but if itself were merely a part of the succession there would be no value or measure of value, in a word no rationality in the world. "In short, the spiritual content of our life undoubtedly unfolds in connexion with history, but it does not grow out of history." The author draws out the consequences at some length, practical no less than theoretical. The weakness of modern Evolutionism is shown to consist in its false estimate of the significance of the Present, which being consciously unrelated to the Eternal loses its real value for the individual, for "no activity possesses worth and character which has not its primary end in itself, its secondary only in its other and future reference, which has not an intrinsic worth and a secure place in the timeless present of reason".

The reader will be prepared by the foregoing for the author's view of the relation of the Individual to Society. That the individual is conditioned on every side by the collective will is clear. That the good of all is a higher good than the good of a private self is only to assert that the value of the individual dwindles in proportion to his detachment from the body politic of which he forms a necessary part. But it is quite another thing to maintain, as a species of Social Ethics is prone to do, that the desires and aims of the community should determine the most strenuous activity of a rational agent. The root of this common error is twofold. The age "knows no inner problems of the individual life, and it is inordinately optimistic in its belief in the efficacy of associated action". In the moral sphere associated action only accomplishes its end if the actors are at once enlightened and self-respecting ; if they are merely instruments of a dominant

public opinion there is no assurance that a common good will be realised. We are driven, then, for a standard of worth and the vision of a genuine life-purpose, behind and beneath the visible frame of things. To ignore this demand of moral idealism is in our author's view to build the spiritual home of the future on shifting sand, to drift into an era of short-lived satisfaction and soulless mechanism.

The result reached in the preceding paragraph clearly needs further elucidation, and this is offered in the chapter entitled "Idealism, Realism, Naturalism". That Prof. Eucken is an idealist of a very pronounced type is sufficiently evident, but he takes pains to show that no idealism can claim the attention of the future which does not accept much from realism, that is not in fact a thoroughly reconstructed idealism. "The gaining, shaping, and saving of a spiritual self, a self of course not outside of but in activity, and not from the bare subject but in connexion with the great facts of the world, that must become the soul of our life-task." It is not a merely dynamical idealism, not mere development of force, but a substantial idealism that is required.

It is impossible in this short notice to refer to all the terms discussed, some of very great importance. I will only further direct attention to the final problem—the religious. The growing severance of Culture and Religion is one of the obvious signs of the time. Why is this? Our author answers because "Religion is alarmed for its depth and actuality, Culture for its breadth freedom and pure humanity". The simple juxtaposition of two such ideal powers may be harmless in quiet times, but critical situations are sure to arise when the equilibrium of indifference is disturbed, and human progress is impeded by conflict and loss of valuable truth. That Religion, freed from all local and temporal accidents, is no foe to culture, rather a condition of the highest culture, the author has no doubt. But then old claims must be renounced. Its superiority to the secular life concerns its substance not its forms. These are common to it with the world it seeks to dominate. The essence of Religion is not a doctrine, or system of special conceptions, it is a comprehensive spirit, a vitalising principle. It is realised through the expression of a deeply-grounded personality. It is anything but "subjective," "or mode of feeling". For "the more through all experiences and external shocks we are thrown back upon the inner life as the Archimedean point and have from this centre to unfold our world, the more necessary is the surmounting of every merely subjective life-form, the elevation of bare sensation to full active life, the progress from the mere punctuality of natural existence to a spiritual world inwardly present to the individual, but not produced by it. To this point we ever come back in all our leading problems, and with it we close our inquiry."

In a brief summing up the author states what he regards as the main defects of the time, and the indispensable means to over-

come them. With ever-increasing accumulation of knowledge and variety of activity we are, he considers, growing poorer in substance and shallower in heart and life. "Looked at as a whole the Present exhibits much reflexion but little intuition, much knowledge, but little productivity, many interests but little force, much elasticity, but little steady prosecution of independent lines of thought, in a word much talent, but little character." The outlook is dark enough, but not altogether hopeless, for the contempt itself of great and inspiring ideas will in time make the need of those ideas intensely felt.

While sympathising with the main drift of the book, and acknowledging the value of so powerful a defence of the foundations of a stable and serious life, the present reviewer cannot resist the feeling that the author's grave apprehensions are in a measure due to a survey of too narrow a range of fact. In this country at any rate, with all the lack of insight into the full meaning of life and the triviality of much that absorbs the interest of masses of men, there is a strain of high purpose by no means rare, which is far from ineffective, although so little conscious of its own profounder meaning. It remains too, perhaps, an open question whether the Professor's idealism has yet reached a form which can be thoroughly assimilated. There may possibly be some readers who will find it easier to *feel* with the author than to *think* with him. In any case the book is one which all who are concerned to understand the bearings of some of the profounder controversies of the day will find suggestive in a high degree.

W. C. COUPLAND.

La Pathologie des Émotions, Études physiologiques et cliniques.
Par CH. FÉRÉ, médecin de Bicêtre. Paris: F. Alcan, 1892.
Pp. 608.

This latest product of M. Féré's diligence attains the often coveted position of an encyclopædia on a special subject that is very readable from end to end. He has collected not only from modern France but to a certain extent also from other times and lands a large mass of carefully arranged anecdote and description bearing upon the emotions natural and morbid, and he has interpreted the data relating to morbid states with the zest of an eager doctor who has found a branch of what he considers medical science which has been little explored and into which he can throw all his energies. M. Féré throughout regards the world with the eyes of a doctor and a teacher of the Physiological Laboratory, and this his last work, on the Pathology of the Emotions, has little to do with pure Psychology, but is rather, as he does not hesitate to call it, a collection of Physiological and Clinical Studies. "Its object," he says,¹ "is to determine

¹ Pref. p. vii.

as well as we can the physiological conditions of the emotions, and to show that these conditions are identical with the bodily states which are brought about in men by the action of the surrounding physical agencies." There is a very candid disdain of anything but physiological conditions and physical agencies, and it is maintained to the last. Psychology, in fact, is treated only as a special branch of physiology.

Granted such a starting point it is only natural that M. Féré should proceed at once to the consideration of the more obvious psychical effects of some of the inevitable surrounding conditions of human beings, such as air, light, sound, &c. Air is comparatively innocuous, still a sufficiency of oxygen is a necessity, for without it we get an intoxication by carbonic acid which involves, it is interesting to note, a retroactive amnesia, and will soon lead up to death; it is from the same insufficiency (P. Bert) under conditions of low barometric pressure that we get "mountain sickness" and its attendant uncomfortable emotions. The effects of the electrical conditions of the atmosphere are practically unknown though they are often spoken of as producing excitement and depression. Light has a stimulant effect on the muscles, especially the red end of the spectrum. Three cockchafers in red light can pull as hard as four cockchafers in white light (Féré), so that there seems some physiological basis for the association of happiness and exaltation with the red end of the spectrum such as is shown by phrases like seeing things "in a rosy light."

The perception of two different kinds of sensation when only one sense-organ is stimulated is a complex subject first discussed in 1812 by Sachs, an albino doctor at Erlangen, under the title "audition colorée," the perception of colour associated with the stimulus of sound alone. Since then Hilbert has observed "olfaction colorée," and Féré has found "gustation colorée". During the last few years the subject has been shown to have further branches by the careful investigations of M. Grüber of Buda-Pesth. At the request of the Paris International Congress of Physiological Psychology in 1889 M. Grüber pursued his researches further, and his report was published and discussed in the second International Congress of Experimental Psychology in London last year.¹ The physiological and psychological interpretation of the phenomena Grüber admits to be still very puzzling; and M. Féré does not help us much by suggesting² that in those who feel these associated sensations the effect of a sound stimulus must be so exactly like the effect of a colour stimulus that when they receive the stimulus of sound alone they construe it as being both of sound

¹ *Proceedings of International Congress of Experimental Psychology.* London, Aug., 1892, pp. 10-20.

² P. 36.

and colour. But if this were the case then we should also expect that a stimulus of colour alone should be interpreted as both colour and sound; and this, M. Féré admits, is very seldom or never the case.

To both the hurtful and curative effects of the emotions M. Féré devotes much attention, and on these points makes some interesting remarks. That the emotions act on the body, more by their effects on the circulation than by anything else, is no new thesis, but M. Féré is developing some new branches of it. That the heart may be stopped for a few seconds, and that there may be localised flush and pallor of the skin, owing to almost any strong emotion, whether it be joy, anger, fear or pain is a matter of common observation; and that there may be many changes of nutrition due to vaso-motor disturbance is a point easy to establish. The skin is particularly easily affected; passion and pain may produce a sweat that is truly hemorrhagic (Parrot); and the scientific world is obliged to admit that in the stigmata of Louise Lateau the blood vessels were really broken, and not broken by anything else than an emotional state as cause. In a shipwreck Follain tells us that the pilot was covered in an hour with pustules from his fear; and the doctor sees many *dermato-neuroses*, such as nettlerash, herpes, pemphigus, vitiligo, &c., from the *choc moral*. And there are more serious cases of function disturbed by emotion, which very possibly originate from the effects of vaso-motor change on various organs. There are many cases of temporary glycosuria from excitement, temporary diarrhœa from fear, and a notable decrease of the secretion of saliva (xerostomia) from chronic irritation. In the case of Diderot there was a noteworthy instance of jaundice from the sight of an execution. The effect of the emotional state of the mother on the child to which she is giving birth is more difficult to trace. It is however often supposed that the morbid emotions of Hobbes were due to the fright occasioned by the Spanish Armada from which his mother suffered in 1588 when she gave him birth; and that it was for this reason that, throughout his life of ninety-two years, he was in constant childish terror of the dark and never dared to pass a night without a night-light. It is a common saying that those who are in fright of an infection are the most easily infected; the fact is supported by good authority (Hack Tuke), and M. Féré explains his reasons for adopting this view in somewhat elaborate detail.¹ The infectious matter, whether it be bacillary or not, when it is introduced into the blood may be entirely eaten up or put an end to by the white corpuscles of the blood, and this process of phagocytosis will be complete and effective in proportion to the number and energy of the leucocytes which are there to do the work. Their number and energy may depend largely on the

¹ Pp. 264-6.

blood supply and nutrition of the capillaries of the part, which, to a large extent, may be under the influence of the emotions acting through the vaso-motor system. In the timid or frightened subject there is a poor supply of blood with its leucocytes in the capillaries, and a poor resistance, consequently, to the infection. This may doubtless seem at first sight far-fetched, and it would require very careful support on many points against sceptical critics; but some original experiments which M. Féré himself has made have an interesting bearing on such a question. Pasteur has shown that under some unfavourable conditions such as cold there is less power than normal in the leucocytes both for keeping themselves alive and for absorbing other cells; his pupils have tried to carry this inquiry further and to prove such a lessened capacity under many circumstances. M. Féré has tested this *chimiotaxie* or vital power on the two sides of a dozen hemiplegic patients by vaccinating them on both sides, the paralysed as well as the normal; he found that out of these twentyfour points of vaccination only three "took," or in other words, were decidedly infected, and these three were all of them on the paralysed sides. It was a somewhat novel experiment, and he takes it to show the greater liability to infection in a point of local weakness. In the same way a baby with infantile paralysis of one leg only, when vaccinated on both sides developed its pustules on the paralysed side only. But many more such experiments are wanted before they can be claimed as a strong support to any theory.

Emotions may lead up doubtless to curative results also. *Cor lactum benefacit morbis* was an aphorism which Galen had inherited from Hippocrates. Chorea may be cured by emotional conditions just as readily as it may have been caused by them. A child may be startled and frightened into a serious attack of chorea, and then when it is taken to a hospital be so much interested and absorbed in watching an accident as to lose the choreic symptoms. A man in melancholy may be deliberately intending suicide and go into a shop to buy a pistol to carry out his intention, but a quarrel about the price of the pistol may completely alter his mind and cure him of his suicidal intention and his melancholy as well (Esquirol). Intellectual activity, or rather absorption, may blunt any emotion; as in the case of Gauss when he was absorbed in mathematics, for though his servant brought him word thirteen times that his wife to whom he was devoted was very ill and at the point of death, he only answered: "Tell her to wait till I come".

As an incident in many pathological conditions of the mind M. Féré chooses Hallucination as one which is worthy of consideration in more detail than others. He includes under the term: "States of consciousness characterised by perception without an object;—a perception, that is to say, which is not the result of synchronous peripheral stimulus of the sense whose perceptive

centre seems to be affected".¹ In the case of a hallucination of sight in a waking state, Sir David Brewster showed many years ago that each line or figure in the scene can be doubled by gentle pressure on the side of the globe of the eye of the percipient, and modern psychology explains this by pointing out that it is probably due to the doubling of the *point de repère*. The essential analogy between the hallucination and ordinary perception is often evinced by the change in the size of the pupils in watching a retreating or approaching figure, and by such other external signs as the folding or unfolding of wrinkles of the skin which accompanies the lesser movements of the eye. Where the hallucination is of hearing there are fewer minor movements to testify its genuineness, but the attitude, expression, and sometimes involuntary movements of the tongue may show that the percipient is attending to something he thinks he can hear. But in this and other forms of hallucination M. Féré takes comparatively little interest in the scene and subject matter of the hallucination, and he has not been inclined to follow up the recommendations of the Paris International Congress of Experimental Psychology in 1889 that a serious attempt should be made to carry out a Census of Hallucinations over a sufficiently large number of persons in good health to make it possible to come to some more adequate generalisations than are known at present as to their frequency, character, and causes.

On the question of whether any hallucinations can be telepathic in the sense of being derived from causes otherwise unknown to the percipients and beyond the range of their known senses, M. Féré declines to give any opinion, and prefers to remain, as he says, in Socratic doubt.²

To follow out the chapters which M. Féré devotes to the physical conditions of the sensory organs and the medical treatment of their morbid states would lead us too far into anatomy and clinical medicine. In turning back, however, for a moment to the general outcome of this most comprehensive treatise we cannot help feeling somewhat disappointed that its author should seem to feel so little sympathy in realising any other point of view than his own in the interpretation of his wide knowledge. "*Le but de ce travail*,"³ he writes, "*est de déterminer autant que possible les conditions physiologiques des émotions, et de montrer que ces conditions sont identiques aux réactions somatiques qui résultent de l'action des agents physiques à l'influence desquels l'homme est soumis. On y verra que les émotions sont des états somatiques qui s'accompagnent d'états de conscience que l'on peut voir se développer en conséquence d'excitations physiques.*" He does not shrink from avowing a somewhat crude materialism when he claims these physical stimuli as the cause of the con-

¹ P. 382.² P. 462.³ Pref. p. viii.

sciousness that is associated with emotion ; and he is confident that experiment is the only means of advancing psychology.¹ However, we gladly acknowledge our great debt to M. Féré for much material that cannot fail to be deeply interesting to any student of physiological psychology.²

A. T. MYERS

¹ P. 396.

² It must be added that the value of his work would have been considerably increased if more attention had been paid to plan and arrangement. As it stands it deserves to be called miscellaneous and shapeless—bearing more resemblance to a rough note-book than to a finished work. This is an extraordinary defect in a French book.

[G. F. S.]

VIII.—NEW BOOKS.

Logic, Inductive and Deductive. By WILLIAM MINTO, M.A. (University Extension Manuals). London: John Murray, 1893. Pp. xii., 373.

The late Professor Minto's work on Logic forms one of the most interesting of the University Extension Manuals. In accordance with the general plan of the series, the author has made it more than a text-book; he has, to use his own words, "attempted two things that at first might appear incompatible". One of them is to put the study of logical formulæ on a historical basis; the other, to increase the power of Logic as a practical discipline. As to the result, opinions are not likely to differ: we are presented with a clear account of all that is valuable in the traditional Logic, brightened at every step by a commentary which furnishes an explanation of the *raison d'être* of each rule and technical term, and a simple statement of its origin and history. At the same time, the whole treatment bears the impress of the writer's enthusiasm for logic in relation to everyday life; there is not a single "dry bone" in the book; even the most familiar friends among scholastic technicalities appear with new faces, suggesting everywhere new applications.

As a Manual, the book is fairly complete. Book i. on the Logic of Consistency—(there seems to be no reason for the order given in the title)—occupies two-thirds of the whole. In it the arrangement departs a little from the traditional order of terms, propositions and syllogism; the four parts are—the Elements of Propositions, Definition, the Interpretation of Propositions, and the Interdependence of Propositions. Of these, the first chapter of Part i. deals with general names and allied distinctions: the second with the syllogistic analysis of propositions into terms. The greater portion of this chapter, which includes a discussion of Modality, undoubtedly belongs to Part iii., and should come there. Part ii., on Definition, takes the reader back to Terms, and the double transition is somewhat confusing. Part iii. deals rather fully with the opposition and conversion of propositions; and Part iv. gives a full account of the Syllogism and its figures and moods, and includes excellent chapters on the Utility of the Syllogism, on Fallacies, and on Formal or Aristotelian Induction.

In Book ii. Induction as the Logic of Science is excellently treated: the author throughout has his eye on Mill's Third Book, and the latter's partial confusion of Formal Induction and Induction as the Method of Science is well explained. Chapters iii.-vi. form an exposition of the Five Methods, under the name of Methods of Observation; chapters viii.-x. deal with supplementary methods of investigation,—the maintenance of averages, the measurement of probability, and inference from analogy. Of the other chapters, the second, on the ascertainment of simple facts in their order, is an interesting account of the "besetting fallacies" of observation; chapter iii. explains very clearly the meaning of Causation, and chapter vii. deals with Explanation, the plurality of Causes, and Hypothesis. It is a pity that the last-named word is not expressly defined.

But the most important matter in the work lies in the account of the evolution of the various logical forms and methods, given in the Introductions and passim, and the discussion of the fundamental principles and presuppositions of knowledge. The origin of the Syllogism is traced in the general Introduction; that of Induction, and more especially of

Mill's Induction, in the introduction to Book ii. In both, the views are a little extreme; with the Posterior Analytics before us we should hesitate before agreeing that Aristotle's logic was merely designed for the accomplishment of his pupils in "the popular game of Question and Answer," or "Yes-and-No Dialectic". The statement seems applicable only to the *Topics*. Professor Minto is also rather hard on Francis Bacon: his method is not altogether to be judged by his own inability to apply it.

Of the style of the whole work it is unnecessary to speak. The author's name is guarantee enough, and the combination of simplicity with epigrammatic terseness is well worthy of his reputation.

It is perhaps to be regretted that no list of authors is given. Many students would be glad to have the names of the works to which he refers indirectly. Some are mentioned in the notes, but by no means all.

A Manual of Ethics. By J. S. MACKENZIE, M.A. London: W. B. Clive & Co. (Univ. Corr. Coll. Press), 1893. Pp. xxvi, 339.

In writing this book Mr. Mackenzie has had to solve two difficulties. In the first place he found himself called upon to write a handbook in a Tutorial Series, while at the same time he resented (as who would not) the limitations which this task implies. He has determined, and I think rightly, to let the tutorial handbook fall out of sight and has produced instead an earnest and striking contribution to the ethical literature of the time. The second difficulty arises from the nature of the science itself. On the one hand it is claimed that Ethics ranks as a human achievement with the highest of the abstract sciences. On the other hand, it is maintained, and is indeed obvious, that Ethics has a more direct bearing than the greater number of such sciences, on the problems of human life. The writer in Ethics has thus the choice before him of confining himself to the strictly scientific discussion of his subject or of expanding upon the relation which his analytic conclusions bear to the constructive aims of practical life. Whether Mr. Mackenzie has been equally successful in dealing with this second difficulty is a question on which I shall reserve a word or two for the latter part of this note.

Meantime we have to recognise in this book the qualities of authorship with which Mr. Mackenzie has familiarised us in his "Introduction to Social Philosophy". There is the same ripe scholarship, the same copiousness of reference, which, although sometimes possibly embarrassing to the junior student, is undoubtedly of the highest advantage to the more experienced. There is the same sympathy with opposing views and the manifest resolve to do justice to the truth that they contain. There is the same abundance of apt literary illustration. Indeed, if there is a complaint to be made in this respect, it is rather that a writer himself so epigrammatic (for example, in the delightful definition of Monasticism as: "an undesirable form of the Division of Labour") and so suggestive (as in the vigorous treatment of Moral Reform, p. 243 and chap. xv.), should so frequently have recourse to the words of others. But the fault, if it is a fault, is on the right side. If the function of the man of culture in modern times is as Matthew Arnold maintained, "to humanize knowledge and make it efficient outside the clique of the cultivated and learned," Mr. Mackenzie has certainly succeeded in humanizing Ethics as in his former book he humanized Social Philosophy. Of more special interest to the student of Ethics are the admirable treatment of the "Freedom of the Will" in chapter viii.; of "Ethical

Hedonism," p. 97 foll. ; the account of the conflict of motives as between different "universes of desire" rather than between individual desires, the real strength of a desire not depending "on its own individual liveliness or force but rather on the force of the universe or system to which it belongs" (chapter v.); and in the second part of the book the stress laid by the writer on the essentially modern duties of reflection upon our Moral Ideals on the one hand and of forwarding social progress on the other.

It would be strange if in a book embracing so much and professing so little (its design is "to give in brief compass an outline of the most important principles of ethical doctrine so far as these can be understood without a knowledge of metaphysics") many important subjects should appear to the serious student to be touched on too lightly, while minor errors have crept into the discussion of less important ones. Thus the question of the standard of higher and lower forms of Desire and Will is treated very cursorily on p. 87. "The wider universe" undoubtedly is judged higher or better than the narrower. We approve of the man who has wide aims, though in the pursuit of them he develops a one-sided and defective type of character. But besides width or comprehensiveness, internal harmony seems to be a second desideratum. We approve of the life of harmonious self-development even though it is not marked by strenuous effort in any particular direction. A discussion of these two ideals and of the possibility of reconciling them in a higher, would, we think, be required to complete this section. But most dissatisfaction will, in this respect, probably be felt with the treatment of Art and Morals in chapter xvi. The writer does not seem to move here with the same ease as in other parts of his subject. The allusions to the literature of the subject are comparatively meagre. One is specially struck with the absence of all allusion to Schopenhauer who might be regarded as the high priest in our time of a view similar to that hinted at on pp. 300-310. Some of Mr. Mackenzie's general remarks on this subject seem, moreover, to want his usual insight. "Poets and artists are not generally supposed to be conspicuous for the excellence of their conduct," reminds us of the schoolboy's statement that: "Shakespeare like *all* great poets fell into debt". One or two minor points in the first part of the book seem to require reconsideration. Aristotle would certainly refuse to accept the definition of "wish" as an "effective desire," while common-sense would object to the *pleasures* of a good conscience being ruled out of court and conscience being defined as merely the "*pain* accompanying the violation of moral principles". It is doubtful also whether Dr. Sidgwick would admit the relevance of the criticism on pp. 105-6.

But this is trifling when there is a more serious matter on hand in Mr. Mackenzie's whole conception of the nature of Ethical Science. In the sentence already quoted from the Preface as to the design of his book Mr. Mackenzie tells us that he aims, not merely at giving an outline of ethical doctrines, but at showing "how these doctrines may be applied to the practical guidance of life". Similarly, on p. 21 he says of the *Science of Ethics*, that he regards it "as instructing us with regard to what we ought to do". With some slight apology for so strong a statement in chap. i., he nevertheless repeats emphatically in chap. ix. that it is the task of ethics "to furnish us with practical principles". Finally, this view is summed up in the classification of Ethics as one of the "normative" sciences, by which is meant "the sciences which lay down laws or rules". Now, it will be better to state at once that we cannot help thinking that there is here some confusion. Ethics is undoubtedly normative in the sense in which Logic and Aesthetics are. It deals with

the standard of judgments of right and wrong, good and bad, as Logic may be said to deal with the standard of judgments of truth and falsehood, Æsthetic with judgments of beauty and ugliness. It is further true that the Study of Ethics may be of great practical importance. At times in the history of the race (perhaps at the present time for special reasons) it may be so in a peculiar degree. Against uncritical attempts to treat Ethics as a department of biology or to solve the problem of life with one-sided formulæ a thorough-going analysis of moral judgment is our only resource. But to admit this is one thing, to maintain that it is part of the task of the writer on the science of Ethics to lay down laws or rules of life in even the very limited extent to which Mr. Mackenzie confines himself in his more guarded statements is quite another. That there is a place for an intermediate or normative science between Ethics as the science of the first principles of moral judgment and the practice of the "art of life," just as it might be claimed that the science of therapeutics stands between the natural sciences of Chemistry, Physiology, &c., and the art of healing, I am not prepared to deny. The existence of an Ethical literature, which is more occupied with suggestions for the moral life than with the analysis of moral judgments, of Ethical Societies and of books on the moral training of children, seems to suggest that such an intermediate or normative science is at any rate in the gristle. But it would be a mistake to confuse the task of the moral philosopher, which undoubtedly is, as Mr. Mackenzie says, to bring the human end or standard of moral judgment to clear consciousness, with the task of the ethical writer, which is to make this clear consciousness prevail and turn it to practical account for the guidance of life. I do not accuse the author of failing to make this distinction (he alludes to it unmistakably in the note at the end of chap. xii.), but he is in general so impressed, and I think rightly impressed, with the importance of the latter function that he permits it in his own writings somewhat to overshadow the former. Mr. Mackenzie has shown here and elsewhere that he possesses the qualifications necessary to do good service in both departments. He has already given excellent proof of his power of dealing trenchantly with the deeper and more abstract problems of Moral Philosophy. He has shown too how familiarity with this line of study may be made the starting point for stimulating discourse on the problems of practical life. We should like merely to suggest the danger of misleading the student on the important question of the real nature and scope of the science of Ethics which may arise from the attempt, otherwise harmless and in Mr. Mackenzie's case we think successful, to combine these two functions in an introductory text book.

J. H. MUIRHEAD.

The Pursuit of Happiness. By D. G. BRINTON, A.M., M.D., LL.D. Philadelphia: David McKay, 1893. Pp. 292.

A brightly written book deserving to be read by students of Ethics and Psychology, though it is distinctly popular rather than scientific. The author regards happiness as coincident with self-realisation. It is not to be regarded as a quantitative aggregate of pleasurable feelings. It is the "increasing consciousness of self." "Rightly understood, nothing is so admirable as self-love; but love yourself, not for what you are, but for what you may be." The book is divided into four Parts. The titles of these are—"Happiness as the Aim of Life," "How far our Happiness depends on Nature and Fate," "How far our Happiness

depends on ourselves," and "The Consolations of Affliction". Dr. Brinton regards happiness in the sense defined as "our being's end and aim". The "moral life is but a means to an end". It is "nothing more than the conformity of the individual to the type of the society in which he lives". There is a refreshing courage in this view. The book is full of telling epigrams and aphorisms.

La Recherche de L'Unité. Par E. DE ROBERTS. Paris : Ancienne Librairie Germer Baillière et Cie., 1893 Pp. 230.

So far as we can disentangle it from the vague polemics which disfigure its exposition the aim of this work seems to be the reduction of knowledge and reality to the logical genus and species. Not the genus and species of science, based upon the discovery of "real kinds," rich in fruitful and inexhaustible differences, but a genus and species which can banish, or at any rate ignore, these differences, and be as barren as the Tree of Porphyry itself. The manner in which this result is to be achieved is indicated in the chapter on "L'irréductibilité interscientifique". There we are told that though we cannot yet reduce, say, organic existence, to a mere subordinate species of mechanical existence, yet the difficulty is one of fact only, and not of logic; it is conceivable that the chemist will one day succeed in producing a living cell, and the difficulty will at once disappear. It is perhaps doubtful whether this distinction between difficulties of fact and difficulties of logic is a desirable one, or whether it does not rather intensify the dualism which M. Roberts is endeavouring to overcome, but out of it arises the whole of the discussion before us. The next step is to suppose that Science has successfully proved the impossibility of reducing real kinds to species and genera. This is the crux of the problem which Mr. Roberts has set himself, and he solves it by postulating an absolute equivalence between the "groups of properties" (*e.g.*, life and movement) which prove to be thus mutually irreducible. The grounds which warrant the assumption that concepts having no common element are synonyms, and the facts represented by them therefore equivalent, are not made sufficiently clear to be convincing.

The motive to this process is to obviate the necessity of any hypothetical summum genus, or transcendental unity, by which to hold together the different facts of our experience. An important part towards getting rid of our superfluous distinctions is played by "la loi de l'identité des contraires surabstraits"; and in the chapters on quantity, movement, &c., the process of reduction is partly carried out. M. Roberts's psychology is evidently an indispensable part of his theory. His animosity towards other psychological views makes it difficult to gather any very clear idea of his own, but if we are not mistaken he regards consciousness as one of the ultimate synonyms, and as thus equivalent to matter, movement, &c. Much stress is laid upon the importance of representing the Sciences as a system of Concentric Circles of which psychology is the innermost and mathematics the outer; this arrangement corresponding with degrees of complexity of the facts studied, space and time (equivalent notions) affording the simplest relations, including all others.

Perhaps the most suggestive chapter is that on the concept of limit, which contains an interesting discussion on the question of the relativity of knowledge.

La Causalité Efficente. Par G. L. FONSEGRIVE, Professeur agrégé de philosophie au Lycée Buffon. Paris : F. Alcan, 1893. Pp. 168.

According to the author, production is the essence of Casuality (p. 10).

The action of any productive agency is a cause, and the creation resulting therefrom is an effect. As typical illustrations of the relation of cause to effect, M. Fonsegrive adduces architect and edifice—upholsterer and furniture—author and book. This conception of Causality M. Fonsegrive proceeds to analyse in three chapters, the contents of which are respectively entitled: I. The origin of the idea of Causality; II. The principle of Causality, its origin, its nature, and its consequences; III. The nature of Causality. Our author notices and rejects Hume's attempt to resolve the notion of Causality (p. 14) into the three elements of contiguity, succession, and frequency-of-conjunction-in-phenomena. M. Fonsegrive finds the source of the idea of Causality in the mental attitude of effort, realised in the act of attention, energy, or inhibition—this is the doctrine of Maine de Biran. In chap. ii. our author proceeds to examine the four formulas in which he says the principle of Causality has been usually embodied: 1. Every effect has a cause. 2. Everything that is moved, is moved by something else. 3. Nothing comes from nothing. 4. Everything that begins to exist has a cause. Of these, M. Fonsegrive rejects the first, third and fourth as tautological or unmeaning, and considers that the second is better replaced by Stuart Mill's dictum, Causality is universal, *i.e.*, every phase of existence is efficient and sufficient for the existence of every other. All nature therefore is a related and mutually implicated whole; but our author maintains that this doctrine only embraces material, not efficient, Causality. Hence, it is clear that the scientist and metaphysician use the word Cause in totally different senses. M. Fonsegrive adopts the point of view of the metaphysician, taking Kant as the best exponent of the idea of efficient Causality, which M. Fonsegrive regards as springing from the mutual play of apperception and perception, the *ego* and the *non-ego*. In chap. iii. the author distinguishes three modes in which the Causal process operates: 1. Causality may be a relation between two immaterial substances. 2. A relation between an immaterial and a material substance. 3. A relation between two material substances. In each of these cases a part of the energy constituting the existence of the cause passes over and is incorporated with the existence of the effect. The *brochure* concludes with a criticism of this doctrine, and the author sums up with an eloquent exposition of the ancient idea of the formal cause which he considers is the actuating principle of nature, implying intelligence, volition and agency.

De La Division du Travail Social. Par ÉMILE DURKHEIM. Paris: Ancienne Librairie Germer Baillière et Cie., 1893. Pp. ix., 471.

This is not, as might be expected from the title, a new work on the economics of industry; but an ethical treatise in the course of which the author aims at determining scientifically the relation between the personality of the individual and the solidarity of society. For the apparent conflict between the two he finds the ultimate solution in that aspect of social organisation which is commonly known as Division of Labour. The suggestion that the Division of Labour may be a moral as well as a natural law leads to a discussion on the nature of Morality, of which M. Durkheim considers Law to be the authorised exponent.

The argument of the treatise is based upon the conception of two phases of social solidarity corresponding to two kinds of Law—repressive and restitutive. The first phase is segmentary, and is represented by the horde, which is composed of homogeneous units and develops into the class, a system of homogeneous segments. The characteristic feature of this phase of solidarity is that it is based upon similarity of parts rather

than differentiation, and much weight is laid upon the existence of a "common consciousness," by which at this stage the individual consciousness is swamped. The representation of criminal law as the mechanical reaction of this common consciousness against acts which offend against it gives rise to an interesting theory of punishment, according to which its function is neither deterrent nor retributive, but merely to preserve intact the social consciousness. The further description of the individual consciousness as developing out of this social consciousness prepares the way for an explanation of the existence of those altruistic tendencies which have proved so puzzling to some moralists; they are remnants of the original and fundamental unity of society which still holds a shadowy, subterranean sway over the developed individual.

It is perhaps rather difficult to get any satisfactory conception of this social consciousness, which—if we understand it aright—precedes, and yet is composed of individual consciousness. It accompanies the segmentary phase of solidarity, and so long as this persists the individual cannot develop. Only as it gives way, first to a territorial, and then to a "professional" organisation, constituting the second or organic phase of solidarity, does the common consciousness loose its hold upon the souls of men, and permit them to become independent forces. This change in the form of solidarity is brought about by mere pressure of numbers ("division of labour varies directly with the volume and density of the society"), which necessitates a more intense struggle for existence, and therefore a greater differentiation of function. Some interesting discussion on heredity and the increasing mobility of mankind illustrates the diminishing hold of the past over the present.

A striking point is made with reference to psychology in the argument that, inasmuch as the greater number of psychical phenomena are derived from the social life and not from organic causes, mental life cannot be regarded as the mere efflorescence of physical life. Moreover, it is maintained that social facts are not the simple development of psychical facts, but the latter are to a large extent the prolongation in the individual consciousness of the former; hence, being effects of life in a community, they can only be explained by reference to the nature of that community.

The third book discusses some abnormal manifestations of division of labour, and explains them as due to incomplete organisation. These being cleared out of the way morality is defined as that which tends to promote solidarity, and compels men to recognise and act upon their mutual dependence. As a powerful force in this direction Division of Labour is therefore a moral law, and one which serves both to develop individuality and to promote solidarity.

Les Luites entre Sociétés Humaines et leurs phases successives. Par J. NORICOW. Paris: F. Alcan, 1898. Pp. IV., xxxiii., 752.

Without prefatory word M. Noricow dashes at once into the wide arena of the "struggle for life," and therein labours till he has wrought a bulky sociological treatise as one volume of the *Bibliothèque de Philosophie Contemporaine*, published by Félix Alcan. He views all social movement, including that among animals, under the aspect of struggle for self-preservation—the struggle being, immediately, in order either to absorb or to expel an obstacle—and of its correlate, association, or co-operation. "The universe is a boundless field, where perpetual battles are being waged and where alliances are concluded every instant." Out of strife emerges association, and association, the elemental form whereof is

juxtaposition—(as Clough said: "Allah is great, no doubt, and Juxtaposition his prophet")—itself constitutes microcosms in which proceed struggles of a modified character. The resultant of all this strife, viz., adaptation to environment, may be epistemologically expressed as a juster conception of things as they are, the suppression of contingent delusions of space and time, an ever greater concord between subject and object. Whence comes happiness.

The law (*procédés rationnels*) of social struggle is that of gravitation, viz., accelerated movement. (At the very outset the author lays down that "everything not founded on natural science is built on sand"). Acceleration is not only physical: it is also psychological, as may be seen in the acquisition of secondary automatic actions; and sociological, as may be seen in the rapid development of an artistic epoch when nearing its meridian. What we call Progress is accelerated adaptation. Strife is co-eval with life, but strife inevitably tends to human progress, because no weapon proves in the long run so efficacious as Intelligence. "What we call Justice is nothing else but the application of the principle of the survival of the fittest" in the effort "to cause the more intelligent to prevail and to eliminate the less intelligent". Modern politics is still based on a series of metaphysical abstractions, contradictions, inconsequences and routines, its best ideal a *statu quo*, a stable equilibrium. But man's ideal should be, not a paradise of calm, but the transforming all conflicts into intellectual struggles, by means of honourable strife and courteous procedure; not immobility, but intense movement, ardent struggle, victory of the better realised with the maximum of rapidity.

Such are some of the leading ideas in this fiery and voluble yet simply written work, which in its examination of the different kinds of struggles amongst human groups, of their dynamic laws, and of the nature of human "alliance" is not hastily optimistic, and contains much that is suggestive along many lines of philosophy. In his concluding chapter on "Science and the Future," he is fain to conclude, Spencerian as he is, with regard to the proper functions of the state, that the one class which "bears in its loins the future of humanity" are the Socialists. He holds up to the reproach of "the classes" the Erfurt (1891) programme and the splendid advances which the feeling of solidarity amongst labourers is making towards international federation.

La Constituante et le Régime Représentatif. Par GUILLAUME DE GREEF. Brussels: G. Lebèque et Cie, 1892. Pp. 338.

There is much in this book which savours rather of the political pamphlet than of the philosophical treatise, and which could only be appreciated by an adept in Belgian politics. We gather that the author is dissatisfied with the constitution of his country, that the Executive is too despotic, and the legislative body not truly representative, and that "the incoherency of their representation and the confusion of their political discussions are only equalled by the convulsive and epileptic state of all their social activity."

To remedy this disastrous condition M. de Greef proposes a new constitution based upon a representation of interests, and the present volume appears to be the answer to a challenge to show the practicability of such a scheme. In the chapter on the "Modern Theory of the State" we find it laid down that the perfect representative system is the perfect representation of interests, which would lead to the most thorough deliberation, which again would produce the most appropriate and therefore the most just, laws. The classification of interests to be represented is based upon a curious tabulation of social functions, and, all social

functions being equivalent, all are to be equally represented—even down to that of “les indigents,” inasmuch as their misfortunes give them the more need of a voice in the government of the country. Perhaps, however, this view of the claims of pauperism as a social function is rather theoretical than practical, as M. de Greef does not provide a special article for it in the scheme which he propounds in the latter part of his book. The population of Belgium is reviewed, enumerated, and classified according to its functions; and to each function is assigned a certain number of representatives. To Agriculture, 60; to Industry, 54; to Commerce, 54; to Art, 40; to Science, 46; to Law, 42; giving a total of 296 Representatives. As to the function of this body itself we are not clear; apparently M. de Greef is uncertain whether it is to act alone, or in conjunction with another chamber, but he anticipates its ultimate development into a permanent Referendum.

The philosophical aspect of this scheme consists in a final elimination of the absolute (*i.e.*, the ancient forms of classes and castes) for which the way is prepared by party government. An attempt is made to show the development of representative self-government by a preliminary survey of political evolution from the beginning of history, but the chapter devoted to this purpose consists only of nine short pages and is too brief to be useful. Various philosophical theories, such as those of Montesquieu and Rousseau are glanced at, and short accounts are given of the schemes of St. Simon and Fourier. The present constitution of the Belgian Government is also described and criticised.

L'Expression des Émotions et des Tendances dans le Langage. Par B. BOURDON, Docteur ès Lettres. Paris: Félix Alcan, 1893. Pp. 371.

M. Bourdon describes his own work as one ‘qui cherche à poser des principes plutôt qu’à résoudre des questions de détail,’ from which point of view it must be pronounced a failure. Its main object, the formulating of principles, is precisely what we should have selected as its weakest point. On the other hand, it abounds in elaborate statistics, and there are not a few sound observations (original and selected) on ‘questions de détail’.

The scope of the work is professedly psychological, but, as the title shows, it deals largely with philology, and frequently trenches on psychophysics, as, for instance, when we have the result of some interesting experiments on pitch and rapidity in speech. The author deserves considerable credit for having grasped the interdependence of the three branches of study, and he has failed chiefly, if not entirely, from being premature. This would be so if he were profoundly acquainted with each of the three, and it must be confessed that he is not. A brief outline of his treatment is this: the emotions and their relation to speech are first considered; then the elements of spoken words, which the author makes intensity, pitch, quality, duration, and pause. Next we have these elements taken in combination or rather in succession. This occupies the larger part of the book, which concludes with chapters on useless parts of speech, Categories, Verse, and Writing.

There seem to be two reasons for the inconsequence of this treatment, the one is the difficulty which met M. Bourdon almost at the outset, and which he plainly states. This in brief is that the muscular actions which produce speech are not the direct outcome of the emotions which are expressed by them, and consequently any attempt to associate certain classes of consonants with certain mental conditions must fail. After, however, fully recognising this fact, he makes the grave mistake which forms the second reason for his ill-success—he appeals to statistics.

Now if no special sense attaches to any particular sound in the individual word, it of course follows that, without very minute weighing of sounds and sense, it would be impossible to draw any inference from merely taking a large number of words, and this is not the way M. Bourdon proceeds. On the contrary, he takes a number of passages from various languages, counts the sounds in each, and tabulates the results. Very good, we think; he intends to formulate the expression-quality of a sound from its relative frequency in a certain language, but to our surprise we find the author dwelling, not on the divergence, but on the identity of his results. Now, if all languages are made up of the same sounds in about the same proportions, it is clearly hopeless to draw any psychological inference from sounds; but the author need not have drawn such futile (and erroneous) conclusions as that the less frequent sounds in each language tend to disappear, and he should have avoided the error of assuming that the *ratio* of one sound to the rest gives the *normal* interval between its recurrences (p. 169). The mistakes which are due to an imperfect acquaintance with linguistic laws are too numerous to be specified here, but the author's taste seems to be for the study of language, and with wider knowledge and more rigorous logic he seems likely to do good work. Let him beware of his imagination; he pronounced "rois" in a relatively low pitch, and thinks one reason is that it would be impertinent to elevate the voice before royalty!

État Mental des Hystériques. Les Stigmates mentaux. PAR PIERRE JANET, Professeur agrégé de philosophie au Collège Rollin, Docteur ès lettres, Lauréat de l'Académie des Sciences morales. Paris: Rueff et Cie., 1893. Pp. 233.

This attractive looking little volume treats of the stigmata or constant and essential features of the mental condition of hysterical patients. It is to be followed by a second dealing with transient and comparatively unessential phases of the disease. Fuller notice will follow when this second volume appears.

The leading topics investigated in the present instalment of the work are the anæsthesias, amnesias, abouls, and the motile disorders characteristic of hysteria. The clue followed by the author is that with which he has already made us familiar in his very remarkable book, "*L'Automatisme psychologique*". Psychological analysis founded on observation and experiment shows that the mental condition of the hysterical patient is essentially one of enfeebled attention. Hence the impossibility of intellectual or volitional effort, especially in the assimilation of relatively new ideas or adaptation to new circumstances. Hence also in very large measure anæsthesia and amnesia. Extensive groups of sensations and images become definitely excluded from the synthetic grasp of personal Consciousness. They can be shown to exist, but the patient is incapable of noticing them.

M. Janet appears to have succeeded in bringing the leading psychological phenomena of hysteria under a general formula, and this is all that he has attempted. He makes no pretence to give a physiological explanation. The value of his work on the clinical side is recognised by Professor Charcot in a short preface. To the psychologist it is undoubtedly of extreme interest and importance. Perhaps the physiological explanation, were it forthcoming, would prove of less value to the student of Mind than the results of M. Janet's purely analytic method. We cordially recommend the book.

Soziologie und Politik. VON LUDWIG GUMPLOWICZ. Leipzig: Duncker und Humblot, 1892. Pp. iv. 162.

In the first book of his essay the author seeks to establish the position

of sociology as a science among sciences; in book ii. he sketches the concepts and laws of the science, and then only, in book iii., proceeds to justify his title by considering politics as a form of applied sociology.

The idea of a science of social groups and their connected activity as such was first brought forward in Germany by Schleiermacher and Friedrich List, and developed by Mohl, Stein, Gneist and Riehl by way of reaction to the individualistic, atomistic doctrine of the State prevailing in France. Rüdinger, Doergens, Bernheim, Massaryk, made scientific advance in seeking for a law of social progress or regress. Present-day opponents of sociology as an independent science fail for the most part to discern the true nature of its subject-matter. It is not philosophy of history, for it starts with no *a priori* "Begriff" of design, unity or cosmos; nor is it socialism, being theoretic, not therapeutic; nor is it statistics, which amounts only to a method, comparable to microscopy in pathology. Neither is it identical with ethnology or political economy. Historians claim that, since its subject is 'society,' they are and have ever been those in possession. But writing history is not science, but art, being "a more or less poetic rendering of human action in the life of the body politic". Even if we admit with Freeman that history is the science of man as a political being, sociology is still distinctive, for it ignores the consideration of individual will and intervention which go for so much in the psychological individualism of historical method, and takes for its unit not man, not "society," but the social group or collective personality, and the system of movements proceeding by interaction of existing social groups. These movements are simpler, more obviously regular and more predictable than those of single persons. Sociology assigns to them no normative values; normal and abnormal for it can have no sense other than conformity to nature and the contrary. Man's highest ideals must be approached through the state or body politic; he can serve no higher interests. And where the interests of social circles mutually collide, those of the "wider and higher" must decide.

This consideration of molar motion bearing along the individual, often unconscious, sometimes vainly resisting, is borne out, we are reminded, by the newer psychology of mental life as mainly impulsive (*triebartig*), and but little dependent on will. Social currents reveal man as a genuine *Hordentier* or gregarious animal.

The supreme and primary law of social movement is the effort after self-preservation, which sets loose all latent social forces, and undergoes modifications through external factors, *e.g.*, climate, and internal factors, *e.g.*, religion. Comte's and Spencer's development of the idea of "social organism" was not so pregnant in results as the Malthusian and Darwinian theory of the struggle for life, by which we see the law of self-preservation resulting inevitably in war or truce rather than peace.

Sociology does not show this to be desirable, it merely investigates phenomena with that "disinterested interest" which is the attitude of the scientist. The author, to bring out the use of the sociological standpoint to the politician, examines the leading movements in modern European politics, and does not shrink from prophecy. The far-seeing politician is *eo ipso* a sociologist, but the wake of social development is strewn with the wreckage of futile, because undiscerning, individual resistance. "Once . . . France grew at the expense of Germany. Not that it was doing thereby anything wrong; the growth was only a natural process of amalgamation . . . between disparate social elements." Will the average German welcome the growth of such "disinterested interest" in his statesmen?

Psychologische Skizzen. Von EDMUND W. RELLS. Leipzig: Verlag von Ambr. Abel, 1893. Pp. viii., 191.

A pleasant little collection of essays dealing in a popular style with some problems in Applied Psychology. Perhaps the most interesting is that entitled "Zur Psychologie der Taschenspielerkunst". The performance of conjuring tricks by a genuine adept is as truly a psychological experiment as any which are tried in laboratories. Mr. Rells has evidently studied the subject very carefully from the theoretical point of view, and he has also familiarised himself by practice with the *modus operandi* of the conjuror. He denies that mere rapidity of movement is an important factor in the more scientific deceptions. On the other hand he lays great stress on the power to perform furtive and isolated movements with one hand or finger, while the rest of the body is otherwise engaged in so overt and natural a manner as to engross for the moment the attention of spectators. He refers to the excellent papers of Mr. Richard Hodgson on the "Possibilities of Malobservation and Lapse of Memory," published in the *Proceedings of the Society for Psychical Research*, for May, 1887, and July, 1892. The other essays treat of "Crystal Vision," "Child Logic," "Genius," and "Psychology in the most recent French Literature".

Commentar zu Kant's Kritik der Reinen Vernunft. Von Dr. H. Vaihinger, A.O., Professor der Philosophie an der Universität Halle. Zweite Band. Stuttgart, Berlin, Leipzig: Union Deutsche Verlags-gesellschaft, 1892. Pp. viii., 563.

It is more than ten years since the first volume of this monumental work was published.¹ Professor Vaihinger claims with good reason that this long pause has been advantageous, inasmuch as it has enabled him to utilise the many valuable contributions to Kantian literature which have appeared in the interval. The present volume treats of the Transcendental Aesthetic. It is characterised by all the merits of the previous volume, minute accuracy, power of logical analysis, lucidity, judiciousness, and boundless erudition—perhaps in an even higher degree. A number of very valuable essays on points of special interest are interspersed in the body of the commentary, and there is an appendix on the special literature relating to the Transcendental Aesthetic.

According to our experience Dr. Vaihinger's book may be read continuously through with pleasure as well as profit, and we think that it ought to be so read, not merely used as a book of reference. Full notice will appear in due course.

Die Ursachen des Verfalls der Philosophie in alter und neuer Zeit. Von Dr. GIDEON SPICKER. Leipzig: Wigand, 1892. Pp. v., 280.

Auguring a new springtime of philosophic development to be approaching after half a century's winter of scepticism within and disregard without, Professor Spicker has set himself the task of inquiring into the cause of this general rhythmic decay and renovation in philosophy. He rejects as inadequate the explanation that classic philosophy, based on reason and imagination, declined through debility in intellectual activity, or that scholasticism, based on religion and revelation, withered from exhaustion of thought-content, and lack of freedom and positive knowledge. Neither explanation suffices for present barrenness.

By different methods and trains of reasoning the author arrives at

¹ Cf. MIND, O.S., Vol. 8., p. 440.

substantially the same conclusions as the author of "Natural Religion" assigned for the decay of creeds. The basis is too narrow; phases of individual and social consciousness are neglected: the one-sided formula in process of time is outgrown, and scepticism intervenes till belief, inspiring and fruitful, finds a more adequate central idea. For belief—belief in the testimony of consciousness, in the possibility of conformity between subject and object,—is the ultimate starting point, as it is the ultimate goal at which thought finds itself. But the necessity of believing or acquiescing, which in the last resort is the criterion for logical truth is only one of the phases of subjective experience. If feeling of any kind force its presence upon us irresistibly, is this "necessity" without objective validity? Is the "sufficient reason" in every case essentially and only a creation of the intellect? It is true that representation and conception are necessary to moral verdicts, but they presuppose a content, themselves furnishing only the form. The dynamic capacity, which, when presented as feeling and aspiration after the Infinite and Eternal, constitutes, according to Schleiermacher, the essential principle of religion is a primary factor. The intellect, recognising, relating, comprehending, formulating, is a posterior function. But religion, morals, art, are not only objects, but also living factors of philosophy, if philosophy is to compass the mysteries of life and consciousness in not one but every aspect. Seduced by the method of physical science the philosopher looks on nature as not of it, whereas he is as much creator as independent observer. To examine ourselves we must unfold ourselves. But philosophy has been too content to be either a science of the Absolute, or absolute science, or even only empirical science, forcing everything that puts in a claim to truth and certainty into the Procrustean bed of the intellect working by logical proof and explanation.

The true aim of philosophy is to bring out a theory of the whole inner (*geistige*) life, as it is and as it ought to be by its self-constructed ideal, and then, taking the results of physical science, to evolve out of both "an absolute principle." But it is timid, eclectic, sceptical, handing over all "transcendental conviction to the empiricism which leans on Bibles and the intellectual formalism of dogmas. Only the philosopher can mediate between science and religion, between the actual and the ideal. A sceptic as to the validity of one or the other can do nothing in such a task.

Die Willensfreiheit und ihre Gegner. Von Dr. CONSTANTIN GUTBERLET. Fulda: Fuldaer Actiendruckerei, 1893. Pp. vii., 271.

In this essay, the sequel to his recent work, *Ethik und Religion*, the writer continues his criticism of the latest developments of what he terms anti-christian philosophy or mechanical monism. Conscious that he leads a forlorn hope, he maintains that in free-will we have a fundamental fact both of subjective and objective experience equal in cogency to the intellectual compulsion accompanying our judgments respecting what is true or not true, and the denial of which lands us equally in complete scepticism. *Cogito—opto—ergo sum*: such is his general affirmation, if we may so formulate it.

His position, however, is by no means so uncompromising as it might seem; it is one of conciliation; and if he fairly represents the new Indeterminism there will almost arise the need of re-stating what remains of positive ground of contention in the old controversy. For he refuses to identify liberty of volition with causeless volition, or to find it incompatible with regularity. Free-will is properly capacity of choice between a plurality of goods, frequently accompanied by the full consciousness that we could have acted otherwise. But at the same

time he readily admits "that nearly everything in human decisions depends on character, education, and external circumstances, . . . and that consequently our freedom is very limited in range". Regularity in social action, as shown by statistics, *e.g.*, in those of thieving, only proves the existence of *approximately* constant quanta of need, of needy persons, of opportunities, and of moral strength and weakness. Social statistics reveal unquestionably the prevalence in every direction of law, but this proves, not determinism, but the existence of an Orderer who is able to combine in the same universe both liberty and law. The procedure in the book is a detailed review and criticism of the theories of the Lombroso school, the physiological psychologists, and of some modern Determinist metaphysicians, viz., Schopenhauer, Rée, Paulsen, and Höffding.

Lo Studio della Delinquenza e la Classificazione dei Reati nella Statistica penale. AUGUSTO BOSCO. Roma: Tipografia Nazionale, 1892. Pp. 50.

Dr. Bosco is an eminent official in the statistical department of the Italian administration, and the essay before us is a very able exposition of the method in which criminal offences should be classified so as to extract not merely their judicial, but also their social, psychological, and ethical import. It is impossible to summarise Dr. Bosco's views and arguments as they are already presented in a very compressed form. In dealing with the English statistics of theft he incidentally illustrates the truth of a statement made by me in the *Nineteenth Century* for June, 1892, that the decrease of indictable offences in England is due to changes in judicial procedure, and not to a real decrease of offences against property. In order to eliminate as far as possible the effects of changes of procedure, Dr. Bosco classifies all kinds of theft together, and shows that whether we take a period of five years or a period of ten years the number of convictions for offences against property is greater now than ever. For the five years 1866-70 the convictions for theft were 38,468; for 1876-80 they were 37,414; for 1886-90 they were 40,570, annually. These figures take no account of the large number of juveniles now committed to industrial schools for theft or liberated after remand. In so far then as Dr. Bosco deals with English crime he unconsciously answers the attack which Sir Edmund Ducane has made upon me in the March number of the *Nineteenth Century*. Impartial testimony of this kind is better than columns of official optimism, in which convictions are confounded with cases tried, and scientific method is cast to the winds.

W. D. MORRISON.

Les Applications de L'Anthropologie Criminelle. CESARE LOMBROSO. Paris: Félix Alcan, 1892. Pp. 224.

This book Professor Lombroso tells us is an answer to the reproach that the investigations of the anthropological school of criminalists possess no practical utility. At the same time he enters a protest against the idea that a knowledge of the true should always be susceptible of immediate application to the everyday affairs of life. In the first chapter Lombroso deals with the criminal type among political offenders. He states that true revolutionists have a harmonious physiognomy: the Italians who revolted against Austrian domination, and many of whom Lombroso has examined, present a smaller proportion of individuals of the criminal type than is to be found among the ordinary population. Among nihilists on the other hand there is a larger admixture of the criminal type, whilst almost all regicides are distinctly criminal in type.

No less than 40 per cent. of the Chicago anarchists had a criminal physiognomy, and a high percentage of French and Italian anarchists present anomalies of a criminal character. At the same time the criminal type is less frequent among political offenders than among ordinary criminals; the crimes committed by these offenders take an altruistic form, and the offenders themselves therefore need a greater degree of indulgence and pity. Although a believer in the death penalty Lombroso would not inflict it on political offenders: it invests them with the halo of martyrdom, and has a tendency to perpetuate their political aberrations. Lombroso draws the following distinction between the political and the ordinary offender: in prison or in a penal colony the ordinary offender is a sluggard who may kill his keepers, the political offender is generally industrious and sometimes a pioneer of progress. Passing from the political offender Lombroso tells us that a knowledge of the criminal type is of the utmost service to the cause of justice. He cites a number of instances to show that he has been the means of securing the conviction of offenders who would otherwise have escaped. Transportation has no beneficial effect on the born criminal. Change of surroundings effects no change in his disposition. He is incorrigible. This is the lesson taught by the French penal settlement at New Caledonia. It corresponds with the teachings of criminal anthropology. The practical application of this teaching is that the habitual offender should be altogether secluded from social life. Another practical conclusion to be drawn from the study of criminal anthropology is that the penal law cannot be based on the theory of responsibility. The criminal is a product of heredity and social surroundings, and laws based upon the assumption that he is not are certain to be inefficacious. The construction of fever hospitals does not diminish fever; this is done by improved sanitary surroundings. Crime is not reduced by building prisons but by improving the stamina and environment of the race. Punishment does not affect the conditions which produce crime, it has in consequence little effect in reducing crime. Social protection, and not individual responsibility, is the only proper basis of criminal law. The best method of social protection is the removal as far as possible of the individual, social, and economic conditions which tend to produce criminal habits of life. In fact, Professor Sidgwick in his *Methods of Ethics* exactly expresses the views arrived at by criminologists when he says that justice requires us to try to alter the conditions under which the criminal acts, and that punishment should be regarded as preventive. Preventive punishment should be a discipline calculated to adapt its recipient to social surroundings; where this adaptation cannot be effected permanent seclusion from social life must be resorted to. Our present English system represents a reaction against the utilitarian theory of punishment. This is principally owing to the pernicious influence of Carlyle. Rarely has English justice when it takes the form of a sentence of imprisonment been so completely retributive as it is now. In discussing the resolutions arrived at by recent congresses on prisons and penal law Lombroso mentions the following resolution of the St. Petersburg delegates: "This congress is of opinion that the teaching of criminal and penitentiary science is most useful, and desirable, and that the scientific study of the application of punishment can easily be reconciled with the exigencies of penal discipline. The congress also expresses the belief that a chair of criminal and penitentiary studies should be established at all universities." Inasmuch as about 750,000 cases come before the criminal courts of England every year it does seem reasonable that the men who try, prosecute, or defend these cases should have a wider knowledge of criminal matters than is supplied by the ordinary text books on criminal law.

W. D. M.

Saggio circa la Ragione Logica di tutte le cose. Versione dal latino del Professore Carlo Badini. Un Note ed Introduzione di Pasquale D'Ercole.

Volume III.: Essologia, Sezione I. La Meccanica. Torino, 1892.

Pietro Ceretti, as we learn from an advertisement on the cover of this book, was born at Intra in 1828. Although a very prolific writer he remained almost entirely unknown during his lifetime, a misfortune no doubt largely attributable to the circumstance that his *magnum opus* was composed in Latin, and a Latin more barbarous than that of the Schoolmen. It was first published at Intra between the years 1864 and 1867, in three large volumes running to nearly 2300 pages, which apparently fell still-born from the press. His admirers hope that its re-issue in an Italian translation will make Ceretti's merits more widely known and appreciated. I cannot help thinking that their expectations are doomed to disappointment, and that the philosophical public of the present day will, like the philosophical public of the last generation, refuse to have anything to do with the enormous tomes that are thrown at their head. Ceretti's system is avowedly based on Hegel's Encyclopædia. Now the Hegelian philosophy, as a body of propositions professing to be true, is universally discredited over the European continent, and when studied at all is only studied as a chapter in the history of thought. Considered as such, an attempt to reform or re-apply its principles must be of the smallest possible interest. Schopenhauer repudiated the charge of having called Hegel a ninny, but admitted that he had applied that term to his disciples. The distinction still remains instructive.

If Hegel's system as a whole is unsound the most unsound part of it is beyond question the "Natur-philosophie". To call it merely futile would be gross flattery; it is positively mischievous and misleading. Not only are the explanations given of physical phenomena illusory and fantastic, not only is there no forecast of the advances subsequently achieved by science, but Hegel is constantly making war on the scientific truths already established in his time and abundantly confirmed by more modern research. Nor is this antagonism accidental; it is due to a deliberate confusion of the objective and subjective orders, to a method that arranges the facts in a series of triads constructed according to a superficial analogy with the processes of logic as opposed to the method that resolves them into their dynamic and material components by mathematical and experimental analysis. Prof. D'Ercole justly protests against the common error that Hegelianism despises experience, observing that Hegel on the contrary insists on the necessary agreement between speculation and the facts of sense. Certainly; did not Trendelenburg observe long ago that experience supplied the weights that make the wheels of the dialectic system go round? In fact, Hegel clings much too nervously to the concrete presentations of sense; what he detects and is always attacking under the name of abstraction is their scientific analysis. Thus he will not allow Kepler's Laws to be deduced from gravitation acting in combination with a tangential force, but explains them by an entirely imaginary inter-play of the categories of space and time. Now, as Ceretti had the advantage of living half a century after Hegel he does not commit himself to all the German philosopher's quarrels with science; his expressions about the Newtonian analysis of the solar spectrum, for instance, are much more guarded and conciliatory; but on other points he follows and even outdoes the aberrations of his master. While admitting the fact of celestial gravitation and giving it a mystical interpretation, he will not allow it to be formulated as varying with the mass of the interacting bodies, and still less to be identified with terrestrial gravity. He actually seems to think that the dependence of force on mass is refuted by the fact that the relative distance of the

planets from the sun is not determined either by their relative mass or by their relative density (p. 456); while in order to combat the identification of celestial with terrestrial gravity he very seriously enumerates the sensible differences between a revolving orb and a falling or pressing body on the earth's surface (p. 458). He quotes with approval Hegel's well-known dictum that "the heavenly bodies are not pulled about hither and thither but, as the ancients said, move along like blessed gods" (p. 460); thus incidentally betraying the mythological motives that contributed to the construction of his own and of his master's system.

Prof. D'Ercole in his introduction to this work nowhere mentions Auguste Comte as an author whom Ceretti had studied. Nevertheless I think some traces of his influence may be discovered both in the style and in the thought of the Italian philosopher. When Ceretti tells us that the heavens are a proof of the divine wisdom only in so far as they serve to systematise our mathematical speculations whereby God creates the celestial system within us (p. 403), this looks very like an idealistic version of Comte's famous epigram, that the heavens declare the glory not of God but of Hipparchus, Kepler, and Newton. Like Comte he discourages the study of stellar astronomy, and like Comte he will not admit the possibility of a celestial chemistry (p. 433); but here comes in the important difference, due to German influence, that what with Comte is merely a limitation of our knowledge becomes with Ceretti a limitation of existence itself which he seems to measure strictly by the extent of our actual knowledge. "If the knowledge of the heavens includes no more than figure and movement according to the idea of magnetic direction and gravitating revolution, this figure and this movement are the essential limits of celestial reality" (p. 466). Hence the nebular hypothesis must be rejected under every form, because under any form it assumes, first, that cosmic matter possesses the physical properties of terrestrial matter, and secondly, that "nebular suns and planets can come to be what they were not before and cease to be what they were" (p. 472). In short, if we think fit to treat any order of phenomena as mere logical or mathematical diagrams we can no longer think of them as complete realities, nor as subject to a common law of evolution. The weak point of all such restrictions is that they are at the mercy of every new discovery in science, as the spectroscope has amply shown in the case of celestial chemistry. But the ingenuity and audacity of Ceretti would no doubt have been fully equal to the task of explaining away the results of spectroscopy, with which, by the way, he seems to have been not altogether unacquainted.

A philosophical system that is neither true nor essentially original, nor influential, nor expounded with any charm of style, but very much the reverse of all these things, has no claim on our attention, especially now when so much that is worth reading has to be left unread for want of time. Prof. D'Ercole seems to think that because Ceretti knew a great deal, and thought and wrote a great deal about what he knew, however falsely and foolishly and grotesquely he may have written, his 2700 quarto pages, composed in a jargon as much more difficult than Hegel as Hegel is more difficult than Heine and as much duller than Comte as Comte is duller than Voltaire, are to be counted as a permanent addition to the intellectual patrimony of Italy. In a country where Oravura Asigine is so much esteemed it is perhaps only natural that the same standard of appreciation should be extended to speculative studies. But on the whole I am of opinion that even sitting through an Italian opera as generally performed in Italy is a less wearisome and unprofitable way of spending one's time than reading a chapter of Ceretti.

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RECEIVED also:—

- J. Bonar, *Philosophy and Political Economy in some of their Historical Relations*, London, Swan, Sonnenschein & Co., New York, Macmillan & Co., 1893, pp. xvi., 410.
- J. Owen, *Skeptics of the Italian Renaissance*, London, Swan, Sonnenschein & Co., New York, Macmillan & Co., 1893, pp. xvii., 419, xxxvi.
- H. Spencer, *Principles of Ethics*, vol. ii., London, Williams and Norgate, 1893, pp. xii., 487.
- M. Müller, *Theosophy or Psychological Religion*, London, Longmans, Green & Co., 1893, pp. xxiii., 585.
- T. J. Hudson, *The Law of Psychic Phenomena*, London, G. P. Putnam's Sons, Chicago, A. C. McClurg & Co., 1893, pp. xvii., 409.
- A. J. Dadson, *Evolution and Religion*, London, Swan, Sonnenschein & Co., 1893.
- F. Ryland, *Ethics*, London, George Bell & Sons, New York, 1893, pp. x., 220.
- J. A. Symonds, *Studies of the Greek Poets*, London, A. & C. Black, 1893, 2 vols., pp. xiv., 466 and 419.
- D. E. Ritchie, *Darwin and Hegel*, London, Swan, Sonnenschein & Co., New York, Macmillan, pp. xv., 285.
- L'Année Philosophique*, Troisième Année, 1892, Paris, F. Alcan, 1893, pp. 324.
- A. Fouillée, *La Psychologie des Idées-Forces*, Paris, F. Alcan, 1893, 2 vols., pp. xl., 365 and 410.
- Dr. Azam, *Hypnotisme et double Conscience*, Paris, F. Alcan, 1893, pp. viii., 375.
- G. Milhaud, *Leçons sur les Origines de la Science Grecque*, Paris, F. Alcan, 1893, pp. 306.
- A. Fouillée, *Descartes*, Paris, Hachette et C^{ie}., 1893, pp. 267.
- G. L. Fonsegrive, *François Bacon*, Paris, P. Lethielleux, 1893, pp. 420.
- C. Picard, *Sémiles et Aryens*, Paris, F. Alcan, 1893, pp. 104.
- A. Lalande, *Lectures sur la Philosophie des Sciences*, Paris, Hachette et C^{ie}., 1893, pp. vii., 348.
- Th. Flournoy, *Des Phénomènes de Synopsie*, Paris, F. Alcan, 1893, pp. 257.
- W. Wundt, *Grundzüge der Physiologischen Psychologie*, 4^{te}, Auflage, Band I., Leipzig, W. Engelmann, 1893, pp. ix., 600.
- Schriften der Gesellschaft für Psychologische Forschung*, Heft 5, R. von Koeber, *Jean Paul's Seelenlehre*, M. Offner, *Die Psychologie Charles Bonnet's*, Leipzig, Amb. Abel, 1893, pp. 517-722.
- W. Steuer, *Die Gottes und Logoslehre des Tatian*, Leipzig, Veil & Co., 1893, pp. 113.
- M. Angelo Vaccaro, *Le Base Del Doretto e Dello Stato*, Torino, Fratelli Bocca Editori, 1893, pp. xxxii., 388.
- L. Credaro, *Lo Scetticismo degli Accademici*, volume secundo, Milan, Ubrico Hoepli, 1893, pp. 358.

NOTICE will follow.

IX.—PHILOSOPHICAL PERIODICALS.

THE PHILOSOPHICAL REVIEW.—Vol. ii. 2. J. G. Schurman—Kant's Critical Problem. [The central problem for Kant was: How are synthetic judgments *a priori* possible. This problem has two branches: (1) How do such judgments arise? and (2) How comes it that they have objective validity? In answering these questions Kant is led to consider another—How is experience possible? But this is not acknowledged by him as the primary and essential inquiry. The main fallacy of his procedure lies in the assumption that synthetic *a priori* knowledge exists. There is really no such thing, but only "facts perceived" and "hypotheses to account for them". We presume that Professor Schurman will endeavour to show in the future articles which he promises that no lurking *a priori* cognition is implied in the perception of a fact or the framing of an hypothesis.] A Seth—Epistemology in Locke and Kant. [Locke was right in holding that "the mind knows not things immediately, but only by the intervention of the ideas it has of them". He was wrong in holding that "our knowledge is only conversant about ideas". Professor Seth remarks that 'it might be more correct to say that our knowledge is never conversant about ideas—unless in the reflective analysis of the psychologist'. We may add that even in psychological analysis the idea cognised is not the idea which constitutes the cognition. Kant's starting-point is according to Seth, 'a hypothetical dualism in many respects similar to that of Locke'. He ought, we think, to have laid more stress upon the essential difference between them, in which lies the Kantian distinction between the object as given and the object as thought. Kant's attribution of "quasi independence" to the phenomenal object is sharply and perhaps unfairly criticised. It is true that phenomena in space are regarded by him as being independent of our subjective perceptions. But this is only because they are thought as phenomenal of an object which is unperceived and "trans-subjective"—an object which apart from its relation to our sensibility is unknowable, though not wholly unthinkable.] E. B. Titchener—Anthropometry and Experimental Psychology. [A protest against confusion of psychological with anthropometrical experiment. "The psychological experiment presupposes, almost universally, practice;—practice in introspection, practice in attentional concentration, practice in the control of the particular apparatus employed. The anthropometrical experiment requires at most only so much practice as is necessary for the correct carrying out of instructions."] No. 3. E. Adickes—Bibliography of Writings by and on Kant which have appeared in Germany up to the end of 1887. [The present instalment of this Bibliography is devoted to Kant's own writings. The arrangement is chronological, and the same order will be adopted for the writings on Kant. "The conclusion will consist of an *alphabetical* list of persons and a *systematic* index." The whole work should prove very valuable to the student of Kant.] A. Seth—The Epistemology of Neo-Kantism. ["Trans-subjective reference constitutes the very essence of knowledge as distinguished from experience as a series of subjective happenings which take place but which mean nothing." This is the position maintained by Professor Seth as against the doctrine of immanency which he attributes to the Neo-Kantians and to Mill. It seems to us that Professor Seth is much more of a Neo-Kantian than his opponents.] J. McK. Cattell—Mental Measurement. [Intensity, ex-

tensity and subjective time are mental magnitudes corresponding to the physical magnitudes force, space and physical time, and they are all measurable. The same is true of "mental complexity" which "may be regarded as analogous to the configuration of a physical system". We are glad to find Professor Cattell maintaining that "our knowledge of the mind is less partial and uncertain than our knowledge of the nervous system".]

In the INTERNATIONAL JOURNAL OF ETHICS for April, Mr. J. S. Mackenzie, treating "The relation between Economics and Ethics"—mainly as viewed from the economic side—says things old and new in a stimulating and discursive manner. A specimen of his new things is "that a man is exploited when he is used as a mere means and pauperised when he is used as a mere end". Mrs. Bryant writes thoughtfully on "Self-surrender and Self-development"; treating of the place of recreation in a life of serious purpose, of the occasional conflicts between right conduct and the cultivation of righteous character, and especially of the gain in self-development—both intellectual and moral—obtained through self-surrender. Mrs. Bosanquet prints a lecture—given before a Massachusetts "School of Applied Ethics" on "The principles and chief dangers of the administration of charity". Mr. Thomas Davidson writes on "The ethics of an eternal Being"; he holds that "no true system of ethics can be constructed except on the supposition that the moral agent is an immortal being"; and lays down—in disagreement with Mrs. Bryant—that this immortal being will "reach a far better and purer result if he acts with a view to the plenitude of his own being . . . than if he has his eye continually on the state of the world and labours to reduce it to an ideal or fanciful Utopia". Utopias, however, being at present much in the air—in every sense—Mr. W. M. Salter points out how the aims of the Utopist might be realised by "Reform within the limits of the existing law"; suggesting that (*e.g.*) any landowner who believes that "unearned increment" should go to the State ought to devote his own to public uses. The general idea is as old as Aristotle's criticism of Plato's communistic Utopia: but it is always possible that the twentieth century may see its realisation. Mr. Sidney E. Mezes writes on "Freedom: its relation to the proof of determinism". He attempts to prove that induction cannot prove or disprove freedom: but that "inasmuch as our assertion of necessity depends on our right to form teleological judgment, that assertion, the ordinary meaning of the words to the contrary notwithstanding, is itself a covert or disguised assertion of freedom". There is also a "discussion," judiciously conducted by Miss Gilliland, on Professor Upton's pamphlet "Are ethics and theology vitally connected".

REVUE PHILOSOPHIQUE.—xviii. An., No. 4. Koehler—Pourquoi ressemblons-nous à nos Parents? Étude physiologique sur la Fécondation. [A very lucid and interesting exposition of the results of recent research.] L. Arréat—De la Méthode graphologique. [An attempt to connect 'graphology' with the classifications of different types of character recently proposed by M. Ribot and M. Pérez.] F. Pieavet—Sur la Néo-Thomisme—et la Scolastique. [A very full account of recent contributions to the history of Scholasticism]. No. 5. L. Dauriac—Psychologie du Musicien. 1. L'Évolution des Aptitudes Musicales. [There are five kinds of musical aptitude: (1) for enjoying music; (2) for discerning good from bad; (3) for justifying such discernment by analytic criticism; (4) for rendering music with feeling and insight by voice or instrument; (5) for composing music. The mutual relations and interdependence of

these various powers are carefully discussed]. F. Houssay—*Sociabilité et Morale chez les Animaux*. [The most potent condition favouring the survival of a species is self-sacrifice of an individual in the interest of the community. The author appears to regard this view as anti-Darwinian]. G. Marchesini—*Sur les Idées Générales*. [The antithesis between abstract idea and concrete percept is illusory: the abstract idea is merely a determination or "specification" of the concrete and sensible by the analytic and synthetic activity of the mind; it is the "logical synthesis" of a plurality of particular ideas.] No. 6. Y. Delage—*La Nouvelle Théorie de l'Hérédité de Weissmann*. [A full and clear exposition of Weissmann's latest views.] J. M. Charcot et A. Binet—*Un Calculateur du Type Visuel*. [An account of the results of experimental investigation of the case of M. Diamandi as compared with that of M. Inaudi. M. Diamandi fixes a series of numbers in his memory with greater rapidity and certainty when he sees the figures written on a sheet of paper than when he has to depend on his hearing. When he apprehends them by vision he first glances at the paper, then closes his eyes and makes an effort to obtain a vivid and distinct image of the figures: he repeats this process as often as he finds necessary. Both M. Inaudi and M. Diamandi were made the subjects of a series of experiments calculated to bring out in an instructive manner the contrast between the mental processes of visuals and auditives. They were required to learn by heart squares severally composed of five numbers each containing five figures. It was found that though M. Inaudi learned much more rapidly than M. Diamandi, the latter repeated the series of figures with far greater rapidity and certainty in all directions other than that from left to right]. L. Dauriac—*Psychologie du Musicien*, II. *L'Oreille Musicale*. [Distinguishes the different factors which constitute an "ear for music" and investigates their manifold variations in different individuals. The aptitudes chiefly examined are those for discerning differences of pitch, of timbre and of rhythm, and for detecting false notes. Deficiency in these respects constitutes tonal deafness. Musical deafness is essentially distinct from tonal deafness. It consists in incapacity for musical synthesis—for grasping the unity of a musical whole].

REVUE DE MÉTAPHYSIQUE ET DE LA MORALE.—Première Année, No. 3. G. Noel—*Le Mouvement et les Arguments de Zénon d'Élée*. [Admits the validity of the "flying arrow" as a *reductio ad absurdum* of the view according to which space and time are composed of ultimate indivisible units. The "Dichotomy" and the "Achilles" are defended against the usual "refutations". Nevertheless they are pronounced fallacious, inasmuch as they are based on a wrong conception of "motion". They assume that motion is a ready-made quantum composed of fractional parts, whereas it ought to be regarded as the process through which such a quantum comes into being.] V. Delbos—*La Morale de Spinoza*. [The distinctive feature of this article is the attempt to make the concept of the "*Amor intellectualis dei*" a key to the interpretation of the Spinozistic system as a whole, apparent inconsistencies being explained as due to imperfect development of doctrine in the earlier stages of exposition.] G. Milhaud—*Le Concept du Nombre chez les Pythagoriciens et les Éléates*. [The Pythagorean numbers were conceived as constituted by units having position in space, *i.e.*, as points. Geometrical figures were regarded as composed of these units, and no distinction was drawn between figure and figured body. The arguments of Zeno were directed against the Pythagorean doctrine that matter is constituted by aggregation of a plurality of distinct elements.]

REVUE INTERNATIONALE DE SOCIOLOGIE.—No. i. Paris. A. Giard et E. Briere, Editeurs. Pp. 112. It is the opinion of the promoters of this periodical that social subjects are the questions of the hour, and that the future of civilisation depends on the manner in which they are solved. Political passion and prejudice will not settle them. They must be approached in a scientific spirit and solved in accordance with scientific principles. The aim of this review is to deal with social phenomena in this spirit—to collect facts, to classify them, and to ascertain the laws which govern them. In fulfilment of this purpose the review will publish original monographs, it will take cognisance of current social movements, it will review the literature of these movements, and its pages will be open to all who have anything to say no matter from what standpoint it is said. In the first article M. Worms, the editor, tells us what in his opinion Sociology is. He defines this rather vague word as the science of societies. It will be observed that this is the definition which Mr. Spencer and Comte before him have already given of sociology. According to M. Worms, sociology is a science in embryo: we have social sciences but no social science. This arises from the fact that sociology is the most complex of all the sciences. Sociology will make progress, M. Worms considers, if it follows the methods of biology, and divides itself into descriptive and comparative sociology. Descriptive sociology will occupy itself with definite sets of social facts; comparative sociology will group these facts and ascertain the laws which regulate them. For ourselves we would say that it is hazardous to press biological method too far in social investigations. Up to a certain point this method is no doubt fruitful, but it is apt to confound analogies with arguments, and it has certainly led one well-known German sociologist, Schäffle, to construct fantastic resemblances between corporeal and social life. Following the biological method Mr. Spencer and M. Fouillee tell us that the final outcome of social evolution will be an individualistic form of society: the Germans on the other hand who follow this method say that the social organism is unfolding in the direction of state socialism. When the facts of social life regarded from the same point of view produce such contradictory impressions on the beholder it is hardly possible to resist the conclusion that the point of view itself is a defective one. M. Worms is on safer ground when he says that the social sciences are as yet in the stage of simple observation, and that it will be many a long year before we can expect anything from them in the shape of a classification of the laws which determine the evolution of social life in its entirety. The next paper is an account of a strike under the regency by M. Babeau. M. Bertillon follows with a discussion of the birth rate in France. He says the abnormally low birth rate among his countrymen proceeds from an economic cause and must be met with an economic remedy. The economic cause is the passion for economic wellbeing; voluntary sterility is the result. The state should abolish this cause by increasing taxation in the case of small families and by diminishing taxation when families are large. It is to be doubted whether this remedy will achieve its purpose. The birth rate in all important European countries has decreased considerably within the last twenty years. As the standard of comfort is raised it will decrease further still and the French in the future will not find themselves so completely outstripped in numbers by other races as M. Bertillon seems to fear. The last article is by M. du Maroussem. The writer sees industry becoming more and more concentrated and the small trader being squeezed out of existence. He is afraid of the triumph of an industrial system which will be headed by a wealthy oligarchy. It is a suggestive paper. A

chronicle of the social movement and a review of books closes a very good first number.

PHILOSOPHISCHE STUDIEN.—Bd. viii., Heft, 3, 4. H. Eckener—Untersuchungen über die Schwankungen der Auffassung minimaler Sinnesreize. E. Pace—Zur Frage der Schwankungen der Aufmerksamkeit nach Versuchen mit der Masson'schen Scheibe. [These two investigations of the 'fluctuations of attention' deal principally with the theory recently advanced by Münsterberg, in *Beiträge*, ii. That theory is disproved by experimentation (sound and sight). The fluctuations are not periodical (except, perhaps, under certain definite conditions, p. 394), and they are not peripherally explicable. Dr. Eckener attempts to furnish a psychological theory of the phenomena, based on a criticism of that of N. Lange.] J. M. Cattell—Aufmerksamkeit und Reaction. [The general validity of L. Lange's distinction of the 'sensorial' and 'muscular' time is disputed.] A. Kirschmann—Beiträge zur Kenntniss der Farbenblindheit, ii. [Typical red-green-blindness, with shortened spectrum; green-blindness, a system containing only the qualities red-orange and blue; green-blindness, with modifications, a case of diminished colour-sensibility, with practical absence of blue and orange. 'Polychromatic' is to be substituted for 'trichromatic'. Anomalies of polychromatism occur, and there are intermediate stages between it and dichromatism. Dichromatism seems to have nearly as many forms as there are cases. Transference of complementarism is often to be noted. The neutral spot does not always lie in the region of the spectrum, where it must be placed in accordance with any theory of ground-colours.] E. Meumann Beiträge zur Psychologie des Zeitsinnes, I. [An elaborate critical article, dealing principally with the Time-sense researches of Münsterberg and Schumann. The inadequacy of the theories of these authors is shown in detail. An experimental investigation of the problem has been carried out by D. Meumann, and will shortly be published. Attention may be called to the *Schlussbemerkungen*, pp. 503 ff., which are, unfortunately too lengthy for transcription.] B. Kämpfe—Beiträge zur experimentellen Prüfung der Methode der richtigen und falschen Fälle. [A careful investigation of the method, in the sphere of sound. The method made good its right to rank with the other attested psychophysical procedures. The paper discusses its theory, in terms of the proposals of Fechner, Müller, and Merkel. Weber's law was confirmed.] A. Kirschmann—Die Farbenempfindung im indirecten Sehen, i. [Results were obtained, which harmonise neither with the Young-Helmholtz hypothesis, nor with that of Hering. The relative extension of the colour-zones, and the influence of the magnitude of stimulus on the range of colour-sensibility are considered. The resemblance between partial colour-blindness and the colour sensation in indirect vision is superficial only.] K. Marbe—Die Schwankungen der Gesichtsempfindungen. [A research undertaken under Prof. Martius' direction, independently of the work of Drs. Eckener and Pace. Their conclusion, that the fluctuations are not periodical, is confirmed. The thesis is maintained, that visual fluctuation is dependent on the relation of the intensity of the difference-stimulus (ring) to that of the ground-stimulus (background). The phases of visibility increase, with increasing difference, within limits. The duration of an oscillation is a function of this increase. The problem is here regarded in a new light. Several points in the three papers call for further detailed investigation.] E. W. Scripture—Ist eine cerebrale Entstehung von Schwebungen möglich? [An answer to Schäfer's objections (*Zeits. f. Ps. u. Ph. d. Sinnesorg.*, iv., 348) to the writer's former publication (*P. S.* vii., 630).] W. Wundt—Ist der Hörnerv direct durch

Tonschwingungen erregbar? [A theoretical discussion on the basis of the experiments of Scripture, Cross and Goodwin, König, Ewald, &c. Either one must retain the doctrine of specific energy, and give up the resonance-hypothesis; or reject the former, and keep the latter in an expanded form. Adopting the second alternative, we have two paths of conduction: tympanic membrane, ossicles, labyrinth-fluid, organ of Corti: and bones of the head, terminal brushes of the cochlearis (lying in bony canals), nerve.] W. Wundt—Chronograph und Chronoscop. [Answer to a criticism of the writer's Chronograph, published by Prof. Cattell.] W. Wundt—Notiz über psychologische Apparate. [A timely note as to the guarantee of the Leipzig instruments.]

ZEITSCHR. F. PSYCH. U. PHYS. D. SINNESORGANE.—Bd. iv., Heft 6. Dr. Ziem—Das Tapetum lucidum bei Durchleuchtung des Auges. [Observations on the cat's eye. Cf. Virchow's *Archiv.*, cxxvi., 467; *Deutsche med. Wochenschr.*, 1892]. G. E. Müller—Berichtigung zu Prof. Münsterberg's Beiträgen zur experimentellen psychologie, Heft 4. Litteraturbericht. Bibliographie der psychophysiologischen Litteratur des Jahres, 1891. Bd. v., Hefte 1, 2. F. Hillebrand—Die Stabilität der Raumwerte auf der Netzhaut. [The third dimensional localisation of a binocularly fixated point is not determined by the stimulus (retinal image), but by convergence *plus* a number of variable empirical moments. The localisation of all other points, seen single in binocular vision, depends on the disparity of the retinal images, and is therefore given in the primitive sensation (p. 6.) Localisation in reference to the nuclear plane (p. 10) is conditioned only by breadth, not by height-disparity. The space-value of two points on the two retinae, which are so related that the corresponding simple object of vision lies on the nuclear plane, is stable. The position of the visual object does not as a rule coincide with the position of the actual object (law of disparate third-dimensional localisation). The article is important.] F. Brentano—Über ein optisches Paradoxon, ii. [A reply to Lipps' criticism (iii., 498.) Whether one accept either or neither of the proffered explanations, one must admit that the methodology of this controversy is correct.] Versammlungen. Litteraturbericht.

VIERTEJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE.—xvii. Jahrgang, Heft 2. J. Petzoldt—Einiges zur Grundlegung der Sittenlehre. [An interesting exposition and criticism of F. Staudinger's system of Ethics, as contained in his book "Die Gesetze der Freiheit". Staudinger holds that the word "ought" always refers to some presupposed end. What ought to be done is what has to be done if the end is to be realised. The "moral ought" refers to an ultimate and unconditional end. This can only be found in the union of all other ends in a harmonious system. This is the supreme end because it is the supreme means. In the case of rational beings the fullest realisation of their desires depends on inward harmony of these desires with each other. Thus the mere fact that such a being seeks any ends at all places him under an obligation to seek this end. Staudinger regards want of inward harmony as invariably consisting in some kind of contradictory relation between ideas. This is the point with which Petzoldt's adverse criticism is concerned. He prefers to the conception of contradiction that of relative incompleteness and instability, and refers to Avenarius' "Kritik der Reinen Erfahrung".] P. Barth—Kritik der Grundanschauungen der Sociologie H. Spencer's. [Examines Spencer's treatment of the analogy between society and an organism. Spencer is charged with inadequate working out of the points of

agreement and with substantial failure to work out the points of difference. Above all he is taken to task for his neglect of the "apperceptive" as distinguished from the merely "associative" stages of social union. In its "apperceptive" or civilised phase society not only exists but is conscious of itself and endeavours with open eyes to determine its own condition and progress.] Chr. Ehrenfels—*Werththeorie und Ethik*, 2te Art. [An elaborate investigation of the conditions which produce changes in "feeling-disposition" and consequent changes in valuation of objects both in the individual and in communities. This article is well worth reading.]

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK.—Heft 102^{te}.—A. Wreschner—Ernst Platner's und Kant's Erkenntnistheorie mit besonderer Berücksichtigung von Tetens und Aenesidemus. [Considers the modifications produced by Kantian influence and by that of Tetens and Aenesidemus in the views of Platner concerning the "objectivity" and validity of knowledge, as shown by comparison of the first, second, and third editions of the "Aphorisms". The examination is careful and detailed. The general result is that Platner owing to the influences referred to developed in a sceptical direction so that in his 3rd edition he renounces the endeavour after "objective" truth and claims only subjective and relative certitude. But he regarded this kind of certitude as attainable not only within the sphere of sensible experience, but also in metaphysical inquiries concerning the soul and God]. Johannes Volkelt—*Psychologische Streitfragen*. [Opposes the following doctrines expounded by P. Natorp in his "Einleitung in die Psychologie nach Kritischer Methode". (1) That the "form of consciousness" as distinguished from its content is not a possible object of knowledge; (2) that this "form" is incapable of qualitative or intensive variations; (3) that pure Psychology cannot be an explanatory science, because, to objectify the contents of consciousness is *eo ipso* to transform them into physical facts; (4) that the only possible "Natural science of psychology" is that which refers states of consciousness to their physiological conditions; (5) that the only function of pure psychology is to trace by analysis of objective cognition the subjective data or immediate contents of consciousness which it presupposes. Ludwig Busse—Zu Kant's Lehre vom Ding an sich. Recensionen, &c.

ZEITSCHRIFT FÜR EXAKTE PHILOSOPHIE.—Bd. xix., Heft iv.—O. Flügel ueber Gefühl und Affekt. [Defends the Herbartian doctrine that feeling has its source in the interaction of presentations from misconceptions on the part of Wundt; but the greater part of the article is devoted to emphasising the distinction between feeling on the one hand and those disturbances of mental equilibrium which are called in a special sense emotions. C. Lange's confusion on this point is noted.] O. Flügel—Über Ziehen's physiologische Psychologie. [Discusses among other points Ziehen's separation of the seat of sensations and the seat of memories, his denial of unconscious mental process, his doctrine of will, and his general view of the relation of body and mind. Besprechungen.]

REVISTA ITALIANA DI FILOSOFIA.—March and April, 1893. E. Passamonti—Giulio Cesare Vanini. F. Bonatelli—Intorno al Giudizio negativo. F. Puglia—Necessita di profondi studi psicologici per lo sviluppo della filosofia del diritto. N. Fornelli—Missione educatrice dell' Università, i. Bibliografia, &c. May and June—G. Dandolo La Dottrina della Memoria in Cartesio, Malebranche, et Spinoza. G. Mantovani—La psicologia come Scienza sperimentale. A. Valdarini—Un nuovo Trattato di Filosofia della Natura. N. R. D'Alfonso—Lo Spettro dell' Amleto. Bibliografia, &c.

REVISTA INTERNAZIONALE DI SCIENZE SOCIALI E DISCIPLINE AUSILIARIE. —Anno i. Vol. i., Fasc. i.-iii. This is a review which has just been established by the Catholic Union of Italy for the study of social science. According to the programme of the promoters the review is to be conducted in a spirit of completely subordinating science to faith, and of docile and unconditional obedience to the head of the Church. In fulfilment of this programme the editor, Prof. Talamo, starts off with an attack on the theory of evolution in general, and of Mr. Spencer's conception of Justice in particular. The article is entitled: "Justice in the Sociology of the Modern Evolutionists," and is chiefly interesting as an ultramontane statement of the case against the doctrine of development. The second article is called: "An Account of the Historical Origin of the present Social-economic Crisis". Prof. Tonioli traces back this crisis to the Renaissance and the Reformation. He prophesies that it will continue till the supreme direction of civilisation is placed in the hands of the Papacy, and the world gets back to the lines of development which were shattered by the revival of learning. Prof. Milanese's article on the origin of the family is written to support Sir Henry Maine's contention that the patriarchal type of family life is the most ancient, the most universal, and the most constantly preserved. There are three methods of approaching this obscure problem: the ethnographical, the historical, and the method adopted by Mr. Tylor, of looking for survivals in civilisation of obsolescent and obsolete customs. Prof. Milanese does not even mention Mr. Taylor. Kovalevsky's able lectures on the origin and evolution of the family are also ignored, and justice is hardly done to the facts and arguments in favour of the matriarchal beginnings of the family. Prof. Bianchi contributes a very good article on the social importance of small holdings and the best means of preserving them. He considers the existence of a large number of peasant proprietors to be a highly consolidating force, and urges the Italians to alter their present laws of succession so as to prevent small properties from being too minutely divided.

X.—NOTES.

We have pleasure in publishing the following appeal to parents and teachers from Professor Sully :—

EAST HEATH ROAD, HAMPSTEAD,
LONDON, N.W., May 1893.

PROFESSOR SULLY will be greatly obliged if parents or teachers of young children can supply him with facts bearing on the characteristics of the childish mind. What he especially desires is first-hand observations carried out on children during the first five or six years of life. Any action or saying which was considered worth recording will presumably have some significance as illustrating either common characteristics or the range of individual diversity among children. With the observation there should be given the sex of the child and the exact age at the time of the occurrence described, also, if possible, a reference to any facts of temperament, surroundings and previous experience which serve either to throw light on the observation, or on the other hand to make it appear extraordinary or exceptional. The points on which observations are more particularly desired are the following :—

1. Under *Attention and Observation*.—Illustrations of the special directions of early Attention and Interest (in looking, touching, &c.), and of the gradual widening of the field of observation. Instances of specially exact, as well as of hasty and inexact observation.

2. Under *Memory*.—Earliest manifestations of memory in recognising persons, &c. Facts going to show what things the child remembers best. Memory for out of the way facts, insignificant details, &c. Examples of strength of verbal memory in the child, as in noting the introduction of new words in the repetition of a familiar story or a poem.

3. Under *Imagination and Fancy*.—Instances of anthropomorphic fancy, child-myth and personification of nature. How the child spontaneously fills up the unknown in space and time. Instances of apparent falsehood resulting from a vivid imagination. Imagination as interfering with observation and producing "illusions of sense".

4. Under *Reasoning*.—First appearance of curiosity about the origin of things, of the child himself, of the Deity and so forth. Childish puzzles or the things which appear strange and set him thinking (*e.g.*, nature of dreams, the fact of his own previous non-existence, birth, &c.). Characteristic modes of childish explanation. How the child translates our explanations of things, and, generally, puts his own childish meaning into our words (*e.g.*, in misapprehension of descriptions, in misapplication of rules of conduct).

5. Under *Language*.—First use of articulate sounds, characteristic omissions, alterations, and transpositions of sounds in repeating words (*e.g.*, in use of "klam" for perambulator). Order of acquisition of different sounds. Invention of new word-sounds (*e.g.*, "mum" for eatable). Original applications of common words (*e.g.*, in calling the panting of a dog "puff, puff").

6. Under *Pleasure and Pain*.—First characteristic manifestations of pleasure and displeasure (smiling, frowning, &c. Instinctive and acquired likes and dislikes for persons, animals, toys, &c.). Favourite modes of amusement.

7. Under *Fear*.—First manifestations of fear, more especially of the dark, of animals, of big moving things, as the sea, &c. Any facts bearing on the question, whether such fears are instinctive or are due to individual experience, and to the suggestions of others.

8. Under *Self-feeling*.—Illustrations of childish feeling for self. Instances of self-pity, self-caressing, &c. Directions of childish vanity (dress, display of strength, &c.). Jealousy, how excited. Manifestations of a feeling of property in toys, &c.

9. Under *Sympathy, Affection*.—Examples of early feeling towards animals and human beings as bearing on question of innate sympathy. Facts illustrating the so-called cruelty of children (as pulling flies to pieces). Special provocatives of pity (e.g., sight of dead animals).

10. Under *Artistic Taste*.—First crude manifestations of taste. Special preferences in the matter of colours, forms, rhythms of melody and verse, &c. Facts illustrating children's ideas of "prettiness," "grandeur," &c. First manifestations of laughter, how provoked. First clear indications of a sense of the comical or ludicrous in children.

11. Under *Moral and Religious Feeling*.—Earliest known examples of respect for authority (e.g., ceasing to cry when spoken to in firm authoritative tone). First exercise of judicial function by the child in scolding (or commanding) others or himself. Facts throwing light on child's first conceptions of right and wrong. Illustrations of crude feeling of justice in little children. What especially excites a feeling of being injured or wronged. Illustrations of moral sensibility and of callousness.

12. Under *Volition*.—Imitation of others in words, gestures, &c. Illustrations of the effect of others' verbal suggestions on childish action. Examples of self-will, of defiance of commands. First manifestations of hesitation in acting and of self-restraint.

13. Under *Artistic Production*.—Spontaneous dramatic invention ('make-believe') in play. Original manual construction (building with bricks, &c.). Invention of stories. First drawings of animals, men, &c. (with fac-similes if possible). Noticeable grades of progress in these spontaneous drawings.

ARISTOTELIAN SOCIETY.—The Fourteenth Session of this Society came to a close on June 12th. The Annual Report of the Committee with suggestions for the work of the next session was approved, and the officers of the society re-elected. The first meeting of the new session was announced to take place on November 6th.

The second volume of the Society's *Proceedings* is almost ready. It will include the chief papers read in the thirteenth and fourteenth Sessions. Among these are three by the President, one on "Matter," another on "Mind," and a third on the "Philosophical Pons". What Mr. Hodgson calls the "philosophical pons" consists in "two central propositions" purporting to express "the indispensable minimum of philosophical thought, to contravene which involves the dephilosophising, so to speak, of the thought in which the contravention occurs". Proposition i. is that "there is no consciousness which does not reveal Being". Proposition ii. is that "there is no Being which is not revealed in consciousness". The proof of i. is based on the statement, (assumed to be self-evident), that consciousness is at least "awareness of a content". The word "awareness" seems to beg the question. Is not a purely sentient experience conceivable, which is merely variously modified without being aware of anything? The papers on "Matter" and on "Mind" supplement each other. In them Mr. Hodgson succeeds in formulating some of the most interesting points in his system with greater lucidity and circumspection than in his larger works. It is worth noting that in

the address on "Matter" he propounds a doctrine concerning the "positively unknown real conditions of matter" which we have difficulty in distinguishing, in respect of its substantial import, from the Kantian theory of the thing in itself. Kant also conceived his *Ding-an-sich* as "the unknown real condition of another thing which is known". Other papers of interest are "The Permanent Meaning of the Argument from Design," by B. Bosanquet; "Scotus Erigena De Divisione Naturæ," by Clement C. S. Webb; "A General Analysis of Presentations," by G. F. Stout; "The Nature of Force and Matter," by R. J. Ryle; "The Measurement of Space, Time and Matter," by Prof. A. G. Greenhill; "The Nature of the Subject," by A. J. Shand; "Psychology and Logic," by S. Alexander. The Symposia are specially attractive. The "Origin of the Perception of an External World" was discussed in a meeting held at Oxford, papers being contributed by the President and by Messrs. Bosanquet and Ritchie. It resolved itself into a triangular duel in which the President was exposed to the fire of both the other combatants. The question "Is the Distinction between 'Is' and 'Ought' Ultimate and Irreducible?" was debated at Cambridge. The discussion was introduced by Prof. Sidgwick, who was followed by Messrs. Muirhead, Stout, and Alexander. The centre of attack in this case was Mr. Alexander's Naturalism. In conclusion it may be worth while to say that the "Aristotelian Society" occupies a unique position as being the most considerable society in England devoted to the "Systematic Study of Philosophy," and that as such it scarcely arouses the interest or receives the support which it deserves. Applications for membership, and for information respecting the Society should be addressed to the Honorary Secretary, 22 Albemarle Street, London, W.

LOBATSCHESFSKY MEMORIAL.

In October, 1893, just a century will have elapsed since the birth of the great Russian geometrician, Lobatschewsky. We have received from the Physico-Mathematical Society of Kasan an appeal for subscriptions to a proposed memorial in his honour. According to the amount received, the memorial will take the form either of a prize for mathematical research, especially in those branches distinctively connected with the name of Lobatschewsky, or of a bust to be erected in the buildings of the University of Kasan, to which he belonged. The proposal ought to meet with substantial support from students of Philosophy, as well as from Mathematicians. Lobatschewsky's investigation of the nature of space and of the foundations of Geometry was of the highest value and interest to the Epistemologist.

NEWS FROM AMERICA.

The second meeting of the American Psychological Association was held at Philadelphia, under the auspices of the University at Pennsylvania, on December 27 and 28, 1892. The papers read were as follows: First session: (1) "Errors of Observation in Physics and in Psychology"; Prof. J. McK. Cattell; (2) "Certain Phenomena of Rotation"; Dr. H. Nichols; (3) "Tactile Estimates of Thickness"; Prof. E. Pace; (4) "Some Experiments upon the Æsthetics of Visual Form"; Prof. L. Witmer. Second session: (1) "Experimental Psychology at the World's Fair"; Prof. J. Jastrow; (2) "History and Prospects of Experimental Psychology in America"; President G. S. Hall. Third session: (1) "Note upon the Controversy regarding the Relation of the Intensity of the Stimulus to the Reaction-Time"; Prof. W. M.

Bryan: (2) "Minor Studies at the Psychological Laboratory of Clark University; Dr. E. C. Sanford: (3) "Das Psychologische Laboratorium zu Harvard University"; Prof. H. Münsterberg (4) "Preliminary Notes upon Psychological Tests in the Schools of Springfield, Mass."; Prof. W. M. Bryan. Fourth session: (1) "Experiments upon Pain"; Dr. H. Nichols: (2) "Exhibition of Instruments"; Dr. E. C. Sanford: (3) "Psychology and Anthropology"; Dr. Chamberlain: (4) "Causation"; Prof. Aikens: (5) "Investigations of Reaction-Times of Various Classes of Persons"; Prof. L. Witmer. The chair was taken by President G. S. Hall. Among members present, who took part in discussion, were Profs. Baldwin, Krohn, Ladd, and Titchener. It was decided, at a general business meeting, that official accounts of the Proceedings of the Association should be published in the *American Journal of Psychology*.

The American Psychical Society, "organised for the scientific investigation of the phenomena of modern spiritualism"—not by any means to be confused with the American Psychological Association—has started a Quarterly under the name of the *Psychical Review*. Dr. Wallace and Prof. Lodge are made the most of, and the articles deal largely with "psychometry" and "psychography".

Professor Baldwin of Toronto has been appointed to the "Stuart Professorship of Psychology" in Princeton University (New Jersey). He will assume the duties of his new position in September, 1893.

THE LATE PROFESSOR MINTO.

William Minto was born on the 10th October, 1845, at the farm of Nether Auchintoul, Alford, Aberdeenshire. He received his early education at Gallowhill School, near Alford, and at the Gordon Schools, Huntly, from which institution he went to the University of Aberdeen in 1861, having gained a bursary of £15. At the University he took a distinguished place in all his classes, graduating in 1865 with 1st class honours in Classics, and 2nd class honours in both Mathematics and Mental Philosophy—a triple distinction unique in the annals of the University. Of the annual money prizes he gained the Simpson Greek Prize of £65, the Hutton Prize of £35 (for Classics and Philosophy), and the Boxill Mathematical Prize of £28. Later in the same year he carried off the Fullerton Scholarship (for Classics and Mental Philosophy) value £100, as well as the Ferguson Scholarship (for Classics) value £80, each tenable for two years. He studied divinity at Aberdeen for one session, 1865-6.

In 1866 he was elected to an exhibition at Merton College, Oxford, but left without taking a degree. Returning to Aberdeen he was appointed Assistant-Professor of Natural Philosophy, which office he held for several months of the session 1866-7, after which he became assistant to Professor Bain, helping him not only with the work of the English class but with other literary work as well. In 1869 he published a pamphlet entitled *The Claims of Classical Studies, apropos of the place of classics in University education*.

From 1872-5 he held the Examinership in Mental Science in the University of Aberdeen. In 1872 appeared his *Manual of English Prose Literature*, which was followed two years later by *Characteristics of English Poets, from Chaucer to Shirley*. These two works, the result of much labour and wide reading, at once established his reputation in the field of literary criticism.

In 1874 he became first literary editor, and afterwards editor of the *Examiner*, which post he held till 1878. In his capacity of editor he spared neither time nor pains, and was successful in gathering round him

a brilliant staff; but the *Examiner* after passing to another proprietor finally died in 1880. For two years after the severance of his connexion with the *Examiner* he worked first on the staff of the *Daily News* and then on the *Pall Mall Gazette*.

In 1879 appeared his well-known monograph on *Defoe* in the English Men of Letters Series, which still further enhanced his reputation as a critic.

In 1880, when Professor Bain retired from the Chair of English Literature in the University of Aberdeen, Minto was appointed to the vacancy, and continued to discharge the duties of the chair till his death.

In the field of fiction he has left three efforts of his pen. His first novel, *The Crack of Doom*, appeared in *Blackwood*, and was reprinted in book form in 1886. This was followed in 1888 by *The Mediation of Ralph Hardelot*, a historical sketch of Wat Tyler's Rebellion, which appeared in *The English Illustrated Magazine*. *Was she Good or Bad?* a semi-psychological study, was published in 1889, but none of these can be said to be of permanent interest.

To such magazines as *Blackwood*, *The Fortnightly Review*, *Macmillan*, *The Nineteenth Century*, &c., Professor Minto was a frequent contributor.

The numerous critical and biographical articles on English writers which he contributed to the *Encyclopædia Britannica* afford ample evidence of his soundness of judgment and literary acumen.

In 1892, he edited the *Autobiography of William Bell Scott*, the publication of which gave occasion for hostile criticism of his work as editor, from the author's outspoken criticisms of living persons. In the same year the University of St. Andrews conferred on him the Degree of LL.D.

Since his death there have appeared *Plain Principles of Prose Composition* (Blackwood's), and *Logic, Inductive and Deductive*, written for Mr. Murray's University Extension Series, the latter volume embracing the fruit of his thirteen years' work in the Chair of Logic.

For some years Professor Minto's health had been gradually giving way under the severe strain of constant overwork. In the summer of 1891, after a bronchitic attack, he went on a voyage to Greece, from which he returned greatly invigorated, but his system never fully recovered. During the Christmas vacation he caught a chill, and when the classes resumed he went to college to lecture, with the result that a relapse set in, from which he was unable to rally, and he passed away on the morning of the 1st of March, at the early age of 47.

As a professor he was exceedingly popular with the undergraduates, and with his colleagues in the Senatus. Ample evidence of the love and esteem in which he was held is to be found in the special number of *Alma Mater*, the students' magazine, which was published after his death. His popularity with the people of Aberdeen was attested by the immense concourse that lined the route of the long procession of students, professors, and general public that followed his remains to their last resting place in Allenvale Cemetery.

Professor Minto married in 1880, Cornelia B. Griffiths, daughter of the late Rev. Mr. Griffiths, Rector of Swindon, Wilts, and niece of Professor Bain, by whom, and by a family of two boys and a girl, he is survived.